



Caring at Ginkgo



Biology is the native language
of the environment

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Safe Harbor Statement

This document includes forward-looking statements within the meaning of the federal securities laws. All statements other than statements of historical or current facts, including statements regarding our environmental and other sustainability plans and goals, made in this document are forward-looking. We use words such as “anticipates,” “believes,” “expects,” “future,” “intends,” and similar expressions to identify forward-looking statements. Forward-looking statements reflect management’s current expectations and are inherently uncertain. Actual results could differ materially for a variety of reasons. You should carefully consider the risks and uncertainties described in the “Risk Factors” section of Ginkgo’s quarterly report on Form 10-Q filed with the U.S. Securities and Exchange Commission (the “SEC”) on May 16, 2022 and other documents filed by Ginkgo from time to time with the SEC. These filings identify and address other important risks and uncertainties that could cause actual events and results to differ materially from those contained in the forward-looking statements. Forward-looking statements speak only as of the date they are made. Readers are cautioned not to put undue reliance on forward-looking statements, and Ginkgo assumes no obligation and does not intend to update or revise these forward-looking statements, whether as a result of new information, future events, or otherwise. Ginkgo does not give any assurance that it will achieve its expectations. Website references throughout this document are provided for convenience only, and the content on the referenced websites is not incorporated by reference into this document.

Stakeholder Materiality Assessment; WEF Core Metrics and Disclosures

This report contains the results of our stakeholder materiality assessment. It also contains reporting aligned to the applicable Global Reporting Initiative (“GRI”) standards and the World Economic Forum (“WEF”) Stakeholder Capitalism Metrics. As used herein and therein, “materiality” has the definition given to that term by the Global Reporting Initiative. GRI does not define materiality the same as the U.S. federal securities laws. Topics that are material for purposes of our stakeholder materiality assessment and GRI and Stakeholder Capitalism Metrics disclosures are not necessarily material for purposes of the U.S. federal securities laws and their inclusion in our stakeholder materiality matrix or GRI or Stakeholder Capitalism Metrics reporting should not be construed as an admission of materiality for purposes of investment or voting decisions or other purposes.

References to Years and Location

Unless otherwise specified, this report focuses primarily on activities during calendar year 2021. All references to a “year” refer to calendar years. Ginkgo’s fiscal years coincide with calendar years; therefore, information relating to financial performance is referring to calendar and fiscal years, which are the same. Unless otherwise specified, this report focuses primarily on activities that occurred in North America.

Foreword

How We Think About Caring

Biology affects all of us, and we believe cell programming will change the world. Our customers are developing products with far reaching implications in health and the environment. This potential for extraordinary impact, which reaches to the core of who we are and everything about our natural world, requires extraordinary care in how the tools of cell programming are built and used.

For many years, caring about the health of the planet has meant being able to imagine the end of the world. The devastation of climate change and the crisis of rising sea levels, wildfires, extreme weather, and pandemics are now undeniable, and we have wasted precious years having to encourage imagination of this dark future.

We believe that caring about people and the planet now requires being able to imagine a better world. And we believe that programming biology offers us an opportunity to imagine and build such a world, because biology grows and builds in a regenerative way, it adapts and evolves, and fundamentally it *is* us and our environment. Our mission is to make biology easier to engineer so that we can more easily imagine what that future looks like and achieve it together.

We're proud to enable our customers to imagine and develop new ways of growing crops and making foods, new ways of treating diseases and manufacturing medicines, new ways of testing for and preventing disease, and new ways of designing and growing the products that we need and

enjoy everyday. In these pages you'll see examples of how our customers are helping the transition to net zero emissions and how cell programming is addressing some of the most pressing challenges faced today.

We also believe that imagining a better world requires asking ourselves—better for who? The way we build these technologies must be broadly inclusive and work to bring in the voices that have been excluded from developing and benefiting from technologies in the past. In this report, we share case studies of our partnerships with a number of terrific organizations that are working to grow the diversity of the biotech workforce, through new degree programs, educational opportunities, and community engagement, as well as international partnerships.

We work with biology because we care about these issues, but working with biology also requires extreme care. Taking care in synthetic biology requires both technical infrastructure, such as biosecurity tools and programs, as well as social and governance efforts to ensure that the voices of a diverse set of people

are part of the design of the technology. This report describes activities in these regards, including relating to our biosecurity work, our partnerships and initiatives, and the steps we've taken to empower Bioworkers to shape how our platform is used and Ginkgo's impact in the world.

This is our first sustainability report as a public company, where we share our vision and approach to caring how our platform is used, highlighting case studies from across our foundries and across our community of partnerships, as well as reporting data according to existing frameworks. We look forward to continuing to share progress, and to using these reports to spark conversation on how best to ensure our platform is best used for positive purposes, because a future where we can grow everything requires care, transparency, and many voices.



Jason Kelly
CEO & Founder



Christina Agapakis
Head, Sociotechnical Studio



Biology affects all of us

About Ginkgo Bioworks



Quick Facts

Our mission is to make biology easier to engineer.

Ginkgo is building a platform to enable customers to program cells as easily as we can program computers. Our platform is enabling biotechnology applications across diverse markets, from food and agriculture to industrial chemicals to pharmaceuticals. Ginkgo has also actively supported a number of COVID-19 response efforts, including K-12 pooled testing, vaccine manufacturing optimization, and therapeutics discovery.

Timeline

Founded
2008

Began trading in 2021
NYSE: DNA

Offices

Boston (HQ)
Cambridge, MA
Emeryville, CA
Melbourne, Australia
Utrecht, Netherlands
Basel, Switzerland

Areas of work

Agriculture
Biosecurity
Energy & Sustainability
Food & Beverage
Materials & Chemicals
Therapeutics & Vaccines

Statistics

628
Full Time Employees

100+
cell programs in 2021

300k+
square ft of foundry

Boundary of this report limited to North America.

The Power of Our Platform

PHASE



Design
Computational design of 100,000s of DNA sequences & strains

Discover new enzymes or gene circuits

Protein engineering

Build
Synthesize and assemble custom DNA sequences

Construct thousands of potential strain candidates

Test
Screen to select highest-performing strain candidates

Characterize strains & molecules

Small-scale fermentation to predict strain performance

Grow
Process development & scale-up

Fermentation optimization

Organism deployment & technology transfer

Quality assurance and control

PERFORMANCE

Database of 3.8B+ unique gene sequences	50+ proprietary chassis organisms	30 million+ strains evaluated (pooled multiplexed) annually	8 commercialized products
Advanced computational tools to discover and optimize proteins, pathways, and cells	Ginkgo is the biggest single user of synthetic DNA in the world (100K+ constructs/yr)	168 Ambr250 systems, running 8,000+ small scale fermentation annually	Up to 50,000L fermentation capacity (with partners)
	100M+ multiplexed genomes edited annually	>10 robotic workcells for high-throughput screening & advanced analytics	300k+ sq ft of Foundry space, 300 robots

Our Ecosystem



Our Commitment to our Stakeholders

As practitioners of synthetic biology, we have a responsibility to ensure our platform is used for positive purposes. We work to consider the interests of many different stakeholders when making decisions and advancing our mission to make biology easier to engineer, because their collective success is key for our business to thrive. Below are principles on how we aim to serve each of our stakeholders.

To our stockholders

We are seeking to build a company with enduring long-term value. We aim to make decisions to ensure Ginkgo is the long-term market leader. Advancing our mission is resource intensive. We expect to continue to re-invest cash back into the business to scale our platform and expand into new markets, with a focus on long-term value for the company and its stockholders. Market leadership will enable us to scale, which is critical for our platform's growth. Growth increases our future free cash flows and stockholder value.

To our customers

We are a platform company. We are here to help you program and commercialize cells for your applications of interest, freeing you to focus on the parts of your business that only you can do. We don't seek to develop our own applications and we don't pick winners. In addition to our automation scale efficiencies, we can best enable all customers to be successful by reusing genetic parts and chassis strains across customer programs. This knowledge and technology has long been fragmented and siloed within individual labs and companies, where its full benefits across markets are rarely realized. All of our customers can benefit from the improvements in our Foundry and Codebase.

To our team

The Ginkgo team is and will be our greatest strength. The team is deeply passionate and engaged in our mission. We want that to continue. That's why we have chosen to implement a multi-class stock structure that permits all employees (current and future), not just Founders, to hold high-vote (10 votes per share) common stock. Ownership is the first step in caring how our platform is used, and as employees, we have an outsized influence on how our platform is developed and deployed. We trust that employees, alongside a strong independent board, will make the best decisions for the long-term value of Ginkgo and our mission. We believe that a diverse and inclusive team is the best way to ensure that our platform is used for the benefit of all.

To our suppliers

For many years, we have been bringing together the most advanced automated technologies in our Foundry for reading DNA, writing DNA, assembling DNA, engineering proteins, growing and evolving cells, and measuring and characterizing their performance. We have a history of making long-term purchase commitments for strategic technologies. We want you to be healthy and flourish. We welcome the opportunity to partner with you and collaborate on advancing these technologies.

To the academic community

Thank you. Ginkgo would not be where it is today without the ideas you've pioneered and the students you've educated. We value transparency, and we look forward to a continued mutually beneficial exchange of people, ideas and resources.

To governments around the world

We believe that biology is the key to a more sustainable economy and the long term health of people and the planet. We are facing global-scale challenges in food, water, climate, and disease. Our food, health, environment, and materials depend on biology, and biology offers opportunities for renewable, regenerative technologies. The sector of the economy based on biological tools and manufacturing—the bioeconomy—is growing rapidly and will have an outsized impact in coming years. Likewise, as we've learned from the COVID-19 pandemic, biology doesn't recognize borders: the only robust national biosecurity is global biosecurity.



To everyone

Biology is beautiful and life fills our world with the richness of all living things. We deeply respect biology and approach our work with humility. A future where we can grow everything requires care, transparency, and many voices. Let's grow together.

Our Approach to Sustainability: Caring How Our Platform is Used

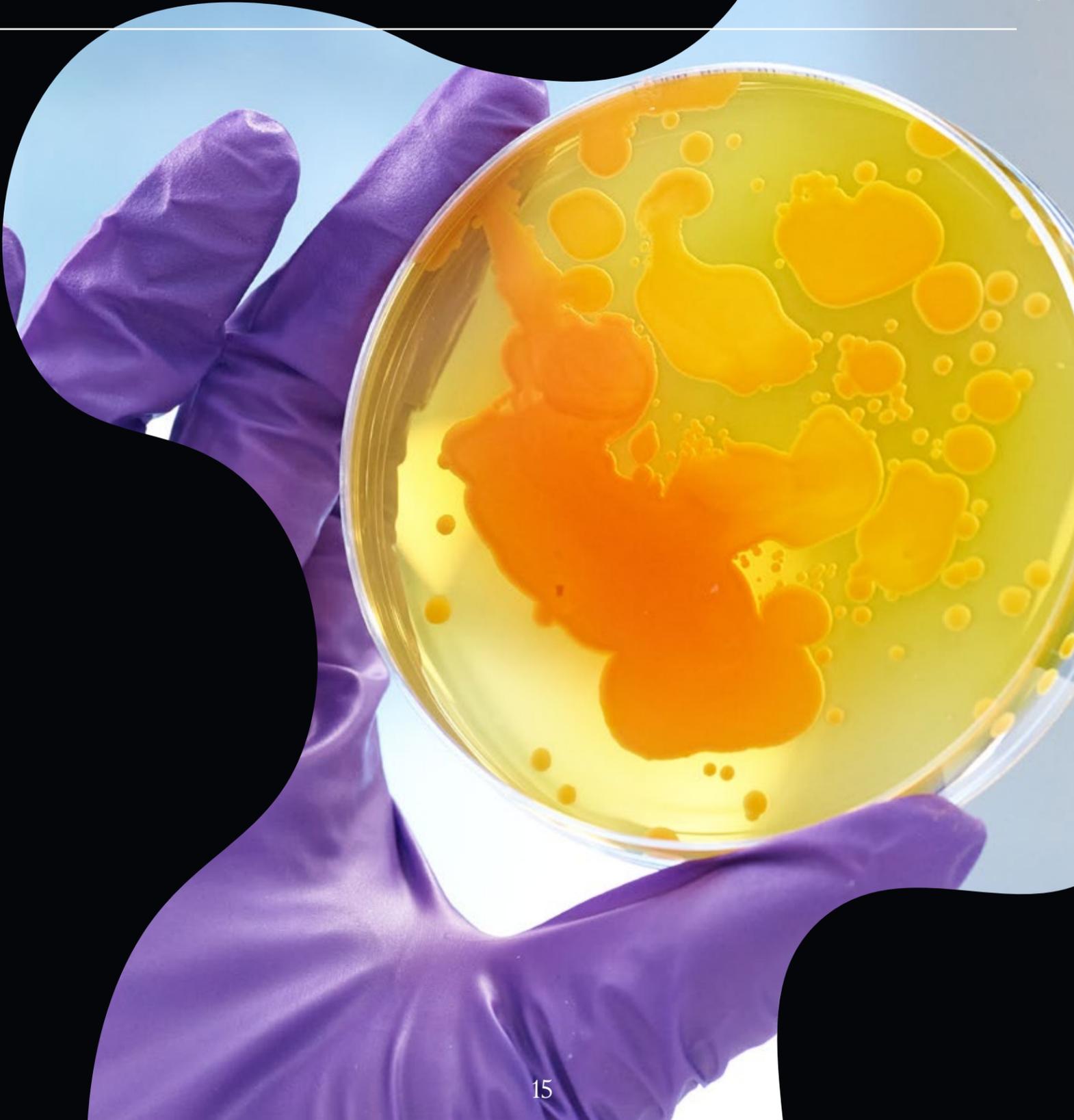
Ginkgo is building a horizontal platform for programming cells across organisms in any market and to address some of the most difficult environmental and societal challenges. We recognize that humans did not invent biology—rather, biology invented us—so we must have humility about the current limits of our understanding.

Engineers often say that technology is neutral; however, we believe that we cannot remain neutral when it comes to the use of powerful technologies—we care about how our platform is used and about the impact it has on the world. Our long-term commitment to care drives our engagement with our customers who seek positive long-term impact, efforts in building large-scale biosecurity technology, and culture and modes of governance.

Our culture is built on care. For us, that means transparency, diversity, employee ownership, engagement, and a deep, humble respect for biology. Transparency is essential to how we operate, to enable sharing of the insights and tools that enable our platform to grow, as well as to build trust and accountability with all of our stakeholders. We have advocated for more transparency in our industry, including supporting

GMO (“Genetically Modified Organism”) labeling, and seek to educate policymakers and the general public about the benefits and risks of synthetic biology through our advocacy efforts.

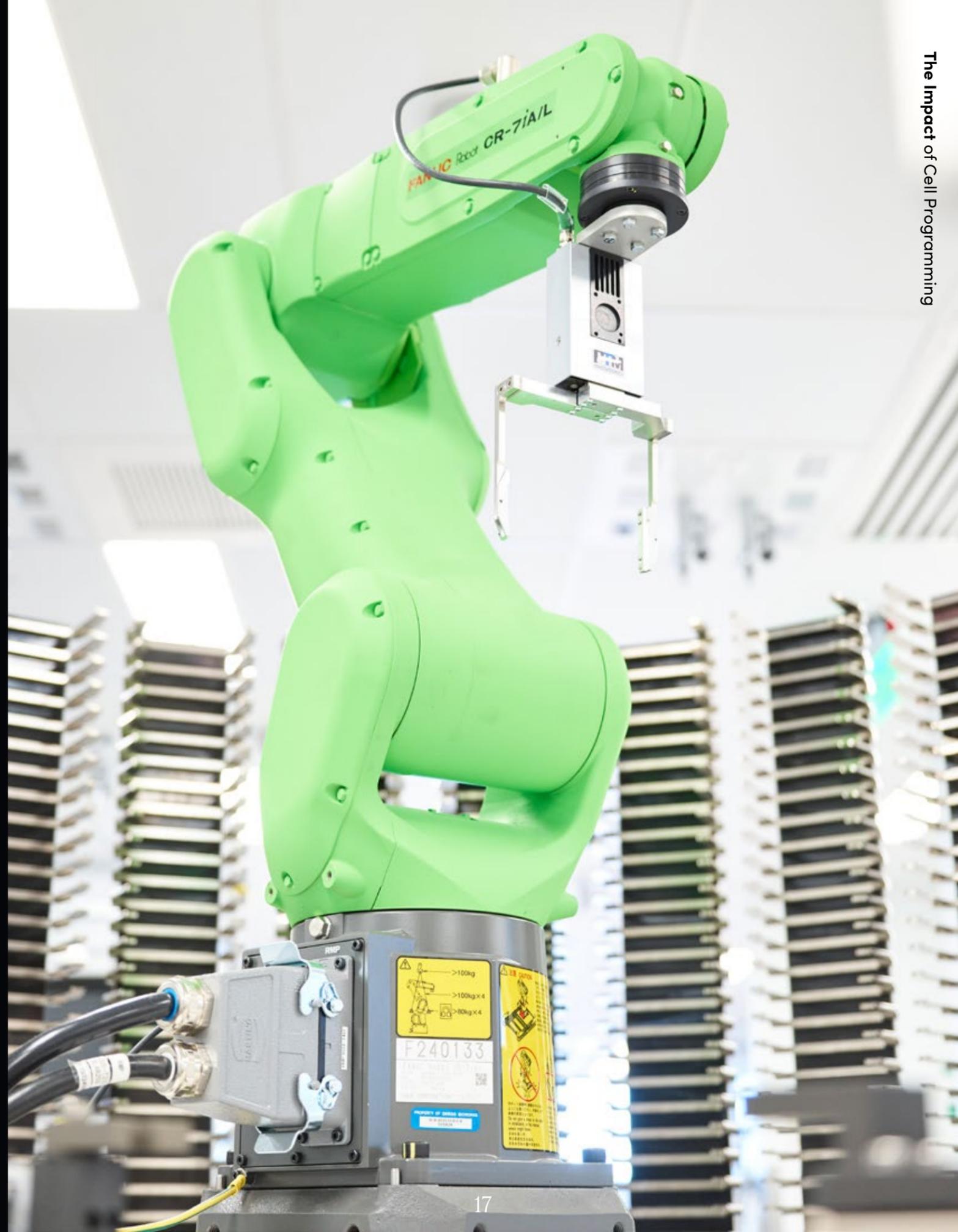
Many of the initiatives and activities that we pursue to realize our commitment to caring are detailed on the following pages.



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The Impact of Cell Programming

Biology is the native language of our environment: it manufactures 100 billion tons of carbon-negative materials every year. Today, our customers are programming cells to develop transformative technologies across food, materials, pharmaceuticals, heavy industry, and more. Our customers are looking to biology as a necessary tool to address some of the greatest challenges we face today, from food security, to climate change, and global health.



Cell Programming is Addressing Our Most Challenging Environmental and Social Issues

Pharma & Biotech

- Antibody therapeutic development
- Nucleic acid vaccine production
- Antibiotic discovery and manufacturing
- Microbiome therapeutics
- Gene and cell therapies



Industrials & Environment

- Wastewater remediation
- Renewable chemicals
- Pollutant degradation
- Sustainable building materials
- Carbon sequestration



Food & Agriculture

- Animal protein replacement
- Brewing & baking
- Fertilizer reduction
- Pest control
- Animal feed and aquaculture



Consumer & Technology

- Flavors, fragrances, and cannabinoids
- Skin microbiome
- Haircare and skincare proteins
- Textiles and dyes
- Electronic coatings

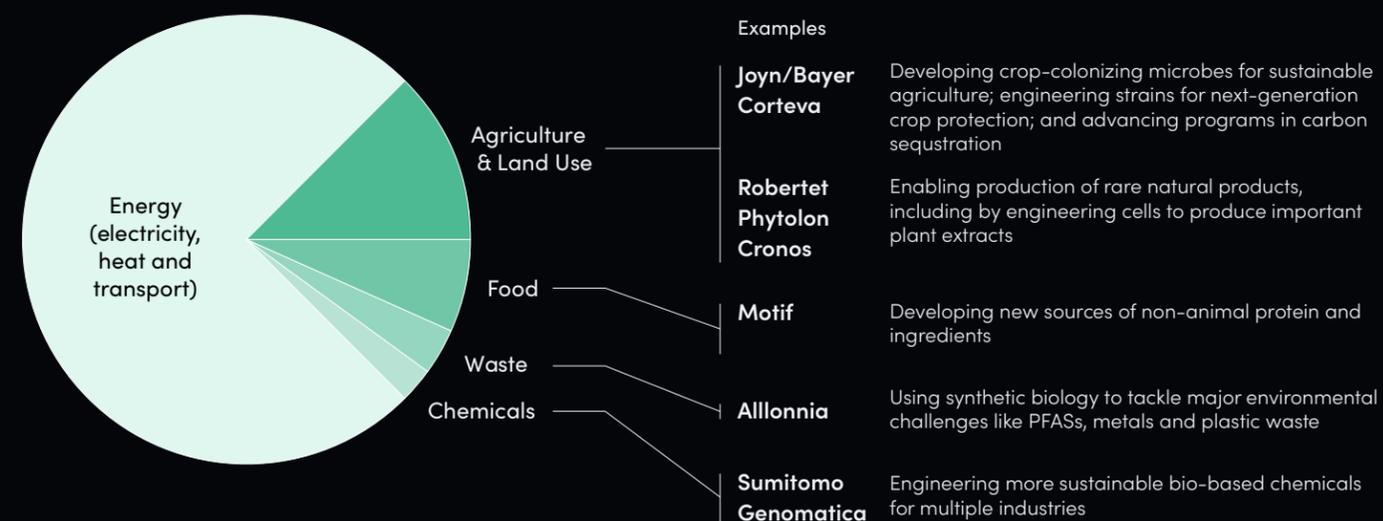


Helping Transition to Net Zero Emissions

Our cell engineering platform enables partners across a wide range of industries to rapidly scale their R&D efforts. Many of our current partners have sustainability and circularity at the center of their missions. Biology is the

original sustainable technology, and we believe that each organism we deliver to a customer contributes to the fight against climate change, including by helping enable a transition to net zero emissions.

Global GHG Emission Sources



Responding to COVID-19 & Preparing for Future Pandemics



In 2021, cell programming provided perhaps the world’s best tool to respond to the COVID-19 pandemic. While 2020 was dominated by news of how the pandemic had upended our entire world, 2021 saw the distribution of mRNA vaccines that allowed us to begin to bring the crisis under control.

Fueled by our March 2020 commitment of \$25 million of free access to our platform to support the fight against COVID-19 and build long-term biosecurity infrastructure to prevent future pandemics, we used our automated biotechnology tools to support widespread surveillance testing and vaccine manufacturing.

Specifically, Ginkgo supported Moderna with process optimization for key raw materials used in the manufacturing of mRNA vaccines. Additionally, our partnership with Aldevron—a leading biomanufacturer of plasmid DNA, mRNA, and proteins—resulted in significant breakthrough improvements in manufacturing yield of the vaccinia capping enzyme, a component that is often required to produce mRNA therapies and vaccines. The newly developed manufacturing process is over 10-times more efficient than the previous process, contributing to significant increases in the number of COVID-19 vaccine doses achievable with each manufacturing run.

During 2021, the COVID-19 monitoring programs deployed by Concentric by Ginkgo (“Concentric”), our biosecurity and public health initiative, scaled significantly. Concentric’s national lab network currently has enough contracted and validated labs to serve millions of people every week. Working with local and state leaders in education and public health, Concentric helped to facilitate reopening and

reduce the need for classroom or school-wide quarantines in K-12 schools across the United States, including through state-sponsored programs in 10 states.

Finally, in partnership with the Centers for Disease Control and XpresCheck®, Concentric operates a traveler-based SARS-CoV-2 genomic surveillance program at four of the busiest international airports in the United States. Through this partnership, Concentric performs viral sequencing on samples that are positive for SARS-CoV-2. Our program was the first in the U.S. to identify Omicron subvariants BA.2 and BA.3, and among the first to detect BA.4 at the country’s ports of entry in April 2022. We shared these samples with the CDC laboratory for further characterization.

We’re continually expanding our biosecurity offering and developing new capabilities to prepare for future biological threats. Whether it’s next-generation sequencing, passive monitoring, or assays to detect a variety of pathogens, we’re building the next generation of biosecurity, bio-resilience, and public health infrastructure, piece by piece.



Responding to Covid and Preparing for Future Pandemics



Prevent

10,000,000+
samples to date

5,300+
organizations supported
to date

4
key US airports



Detect

35,000+
viral samples
sequenced to date



Respond

10x
Partnered to produce
more vaccinia capping
enzyme per batch than
the previous process

Our Footprint

Biology offers a fundamental shift in how things are made and disposed of: a world where things grow and decay, creating circular, regenerative processes.

As we advance in our mission to make biology easier to engineer, we believe that our platform will continue to positively transform industries and will help our customers become

even more sustainable. Even though we expect that applications on our platform will lead to sustainability gains and emissions reductions that far exceed our own footprint, we know that absolutely none of us are exempt from the world's carbon budget.

At Ginkgo, we are committed to managing our impact on the environment. We are preparing

to report on our own emissions and will work with partners to more systematically assess the environmental impacts associated with applications on our platform.

A few of our flagship initiatives to reduce our footprint are highlighted here.

Project Footprint

In our Project Footprint initiative, Bioworkers from across the company work together to identify and advance opportunities to further environmental sustainability solutions associated with Ginkgo's operations. The group meets bi-weekly and has raised awareness across Ginkgo and driven action internally since 2019. For example, Project Footprint has driven progress in areas of waste management and energy consumption, as well as implemented site-wide composting in nearly 20 office kitchens and lunch areas.

Although the pandemic disrupted our regular meeting cadence, Project Footprint has resumed meeting and has recommitted itself to driving environmental sustainability initiatives at Ginkgo, including to realize opportunities highlighted in this report, as well as to align with Environmental, Health and Safety Management System programs (e.g., EHS Aspects and Impacts).



Reducing and Recycling Lab Waste

Similar to other biotech, pharmaceutical, and life science companies, nearly all of the material that leaves Ginkgo’s labs as a waste is regulated and can be considered hazardous. Unless handled and disposed of properly, this waste could pose significant environmental risk.

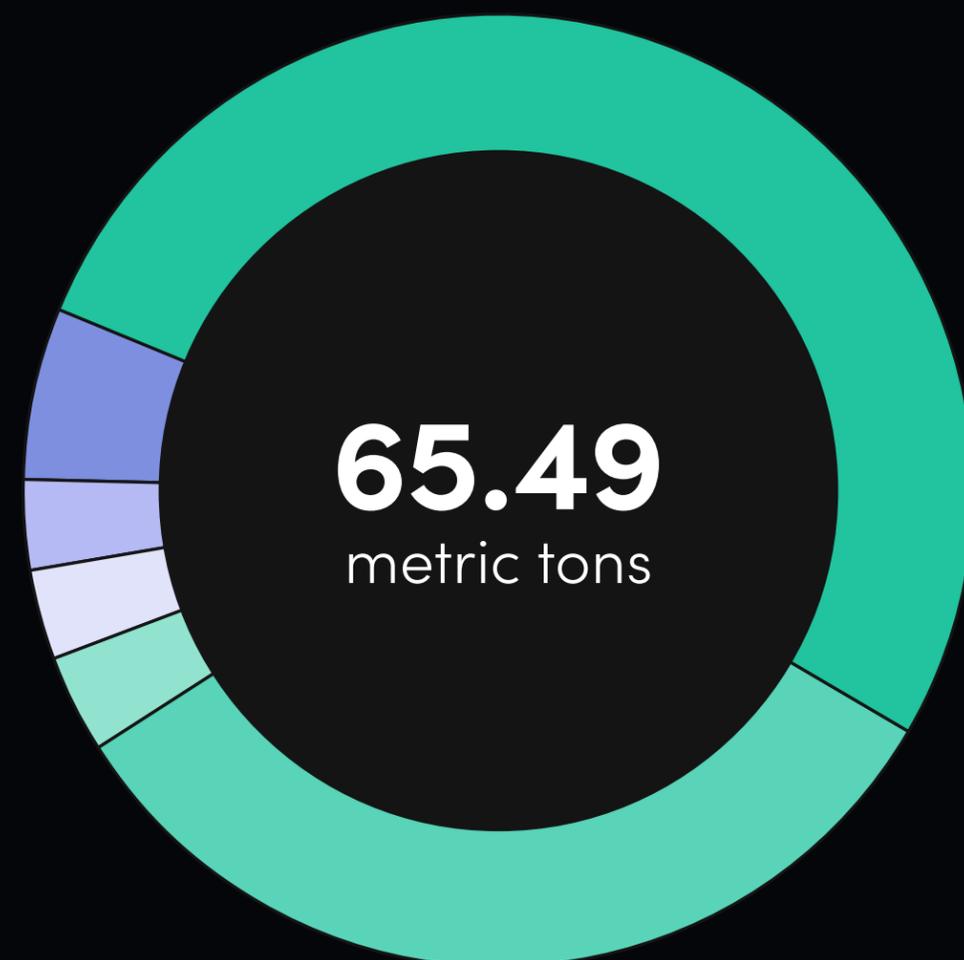
For this reason, since 2019, Ginkgo has worked with Triumvirate Environmental on all aspects of our waste management program, including conducting regular reviews; routinely assessing and ensuring compliance; analyzing trends; and conducting audits and inspections.

Further, at Ginkgo, we aim to use sustainable treatments for as many laboratory waste streams as possible. To accomplish this, we track waste from the point of generation in our labs all the way through to final disposal. When considering a new waste stream, we proactively select end facilities that use sustainable treatments wherever possible. The sustainable treatments that we use include waste-to-energy, fuel blending, and recycling, as opposed to conventional treatments, such as incineration or landfill.

Ginkgo has been using Triumvirate Environmental’s Red2Green program to recycle its biologically-hazardous waste. Given the nature of our work, about half of all waste from our labs is contaminated with biological material, and much of the debris is made from single-use plastic such as pipette tips and well plates. The Red2Green program takes biohazardous waste and recycles it into plastic lumber at an 80% efficiency.

To minimize our waste, Ginkgo uses a chemical inventory management system to decrease the amount of hazardous material brought onsite and therefore generated as hazardous waste. Before ordering a chemical, Bioworkers are encouraged to check to see if the chemical they need is already onsite by searching the cloud-based EMS chemical inventory database or by looking in the communal chemical storage rooms. This system is updated frequently to ensure that chemical storage information is accurate and made available systematically.

2021 Lab Waste Treatment



Conventional: 12%

■ Incineration	3.79 mt
■ Treatment/stabilization to landfill	2.02 mt
■ Landfill	1.84 mt

Sustainable: 88%

■ Recycle	34.27 mt
■ Waste to energy	21.22 mt
■ Fuel blending	2.35 mt

At Ginkgo’s Boston headquarters

Reducing Plastic Consumption via Automation

Conventional biological laboratories are characterized by labor-intensive operations and significant plastic and reagent waste. Creating novel biological inventions normally requires highly skilled individuals to repeatedly transfer small amounts of liquid between different disposable plastic containers. At Ginkgo, our scientists leverage highly advanced automation systems not only to help us scale and increase the accuracy and precision of our experiments, but also to shift the nature of employees' jobs to be more creative and collaborative and to reduce our environmental footprint.

One of the most central capabilities of our Foundry is automated liquid handling. By replacing manual pipetting with instruments that can far more precisely and rapidly transfer solutions of cells, DNA, proteins, and more, we are able to significantly expand our productivity and effectiveness. These workhorses of our laboratories take several forms, ranging from Hamilton instruments that use displacement of air to move liquids just like conventional pipetting, to Labcyte acoustic liquid handlers that use sound waves to transfer volumes that are so small—nanoliters at a time—that scientists could never move by hand.

A powerful feature of acoustic liquid handling is that it allows us to miniaturize many of our operations. For instance, we use PCR—the chemical reaction behind many COVID tests—frequently as we engineer cells. Through acoustic liquid handling, we have been able to adapt our standard PCR reaction to a volume that is ten times smaller than conventional laboratory systems. The smaller size of our PCR reaction means that every reagent, or chemical ingredient, is needed in far smaller quantities each time we run the process. Approximately one quarter of our laboratory reactions have been similarly miniaturized, leading to a reduction in the environmental impact of creating and disposing of reagents.

Automated liquid handling can also reduce the amount of plastic consumed per reaction. In a conventional laboratory,

Plastic saved by using plates instead of tubes in 2021

3.2 tonnes
of plastic

+

Plastic saved by using acoustic liquid transfer in 2021

1.5 tonnes
of plastic pipette tips

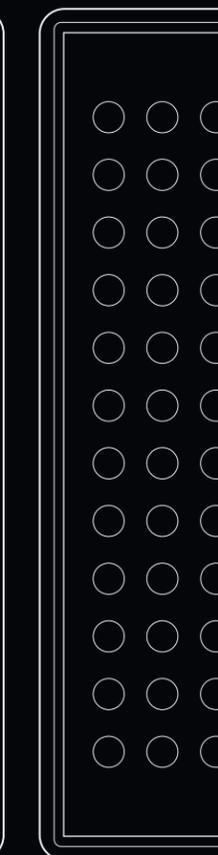
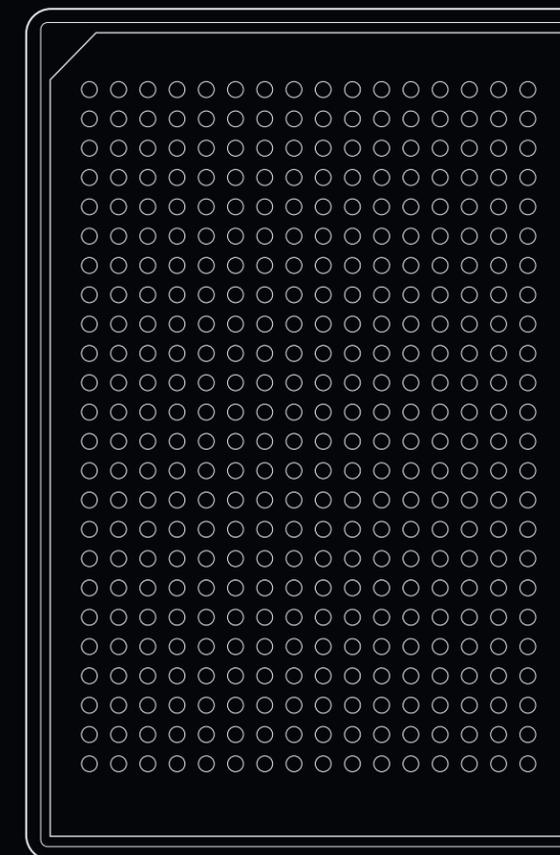
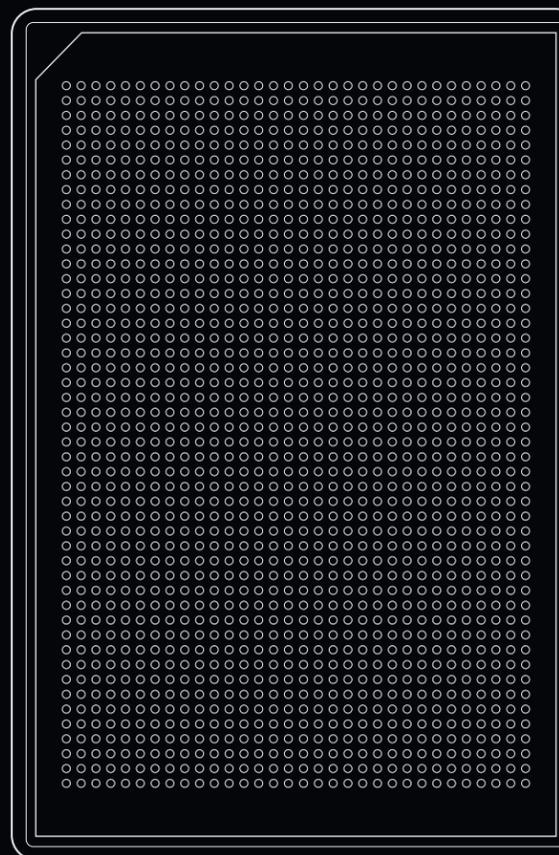
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Total savings

4.7 tonnes
of plastic in 2021



which is roughly equivalent to one teenage T. rex



each reaction is handled individually in test tubes. On automated liquid handling platforms, individual reactions are handled in groups, where a single plastic tray, or “plate”, contains many compartments for individual reactions, arranged side by side with shared walls. A common format in laboratory automation places 96 reactions together in a single plate, but we also use plates with 384 or even 1,536 reactions all together. These automation plates require less plastic per reaction than individual tubes do. In the last year alone, we estimate that we saved 3,170 kg of plastic by using 96 well plates instead of tubes. Additionally, acoustic liquid handling, which uses sound waves to transfer droplets of liquid rapidly and precisely instead of displacement of air, does not require plastic pipette tips for every transfer of liquid the way that conventional liquid handling does. In 2021, we estimate that we avoided using 1,528 kg of plastic pipette tips through employing acoustic liquid handling.

Technology isn't Neutral

The individuals who build new technologies have significant power. We embed our values into the platforms and products that we make. As individuals, our worldview and our privilege profoundly affect what problems we choose to solve, what risks we choose to accept, and what safeguards we put in place. And in biology, these choices are all the more critical. But right now, the direction of the bioeconomy is largely driven by those with the most privilege. At Ginkgo, we believe that as an industry leader, it is our responsibility to better share that power for the benefit of our stakeholders and communities.



Ginkgo's Role in Society and in Our Community

In 2021, we focused on creating more accessible talent pipelines into bioeconomy jobs, fostering meaningful conversations around some of the hardest issues in synthetic biology, and empowering the next generation of global leaders. We partnered with non-profit organizations, colleges, and other industry players to create novel programs around the world, from Boston to Nigeria. We created platforms and forums for exchanging ideas and challenging the status quo. We launched unique fellowships to foster the growth of a more diverse and creative workforce. We worked to advance public health capacities so that we are better safeguarded against biological risks. And we continued to improve the ways we engage in and relate to our communities.

We have a responsibility to the communities that neighbor our laboratories. Large corporations risk exacerbating inequities in the cities they occupy by creating benefits, like jobs, for the more privileged groups and costs, like contributing to rising housing prices, for less privileged groups. We want to break this pattern in Boston. We are working to create jobs and benefits for all Bostonians, and not just for graduates of elite institutions. In 2021, we began to build pipelines for Massachusetts residents to join Ginkgo through more accessible pipelines, including associate's degrees and apprenticeships, and to support organizations that help underserved Bostonian high school students to become interested in and excited about synthetic biology.

We are also a global company whose products affect communities around the world. A thriving and just bioeconomy is one where all people share in the benefits of synthetic biology products and are equally protected against potential risks of this technology. To bring us closer to this reality, Ginkgo is supporting the development of bioeconomy and biosecurity infrastructure worldwide, sponsoring competitions and events for students around the world, and creating opportunities for thought leaders across many disciplines to advance their work in synthetic biology.

We are proud of our accomplishments, but we also know that this work will never be complete. We have significant room for improvement with our internal metrics and want to affect change in our industry as a whole. To this end, we routinely reflect on progress as well as our shortcomings and work to better examine our biases and incentives so we can continue to grow.

Each of the sections that follow are, we believe, a piece of the puzzle towards progress. We acknowledge and embrace that the internal and external interventions we are investing in are long-term plans and may take years to create change. Each of our programs reflect the urgency we feel around these goals.



Diversity, Equity, and Inclusion at Ginkgo

DEI Mission Statement

We care about how our platform is used and recognize that it reflects the values of the people who build it.

We strive to bring unique experiences, ideas, and perspectives to grow an inclusive culture reflecting our global community, in order to ensure equitable distribution of the benefits of our platform.

We want to make sure that a diverse set of voices is shaping the way our platform is built and used. But the biotech industry workforce and leadership is overwhelmingly white, male, and economically privileged. We seek to actively intervene to correct these norms through creative internal and external Diversity, Equity, and Inclusion (“DEI”) initiatives. If we are a platform meant to engineer biology, how do we best consider the second- and third-order effects of our platform on the communities our technology will impact, to be sure that the costs and benefits are equitably distributed? How does a company with its headquarters in an area panned for a lack of diversity engage with the local community to drive change while thinking about its impact on a global community? And how do we include the voices of those excluded—from Boston and from bioengineering—in our platform as we grow?

While our diversity metrics mirror those of the industry, it is obvious that there is significant room for improvement. Our efforts to improve are both centralized—with better infrastructure to diversify our talent pipeline and the development of inclusion-related programming—and dispersed—with each team working to increase diversity and build a culture of inclusion. And, beyond diversity, Ginkgo could do more to create a truly inclusive environment for all of our team members. Rather than hide from these facts or ignore them, there is commitment from leadership to change and grassroots energy to support DEI initiatives.

In 2020, Ginkgo’s leadership team made a \$1 million commitment on behalf of Ginkgo to DEI initiatives and a public statement in support of increasing Black representation in science, technology, engineering, and mathematics (“STEM”). This leadership and vision comes from the top down, from a set of Founders who envisioned a future where Ginkgo is a pioneer for how a company can use its platform, its resources and its energy to advance and support the global voices it will impact and include all those voices as we grow. To date, these funds have been used to create the Cultivate Fellowship ([page 38](#)), to support the Benjamin Franklin Cummings Institute of Technology, and sponsor the activities of STEMNoire.

More broadly, we seek to approach our DEI systems with the same level of imagination and vision as we approach biology, in order to build

something new that is truly inclusive. Many of our tasks have been similar to those of other companies in our phase of growth: organize and listen. We maintain Affinity Groups to support our diverse populations and focus groups to hear from specific communities. Almost 200 Ginkgo Bioworkers have joined and participate in affinity groups to support our Black, LatinX, Asian-Pacific Islander, Underrepresented Gender, LGBTQIA+ and Veteran communities within the company. We have hosted internal discussions on Allyship and Communication to help transform the way we lead.

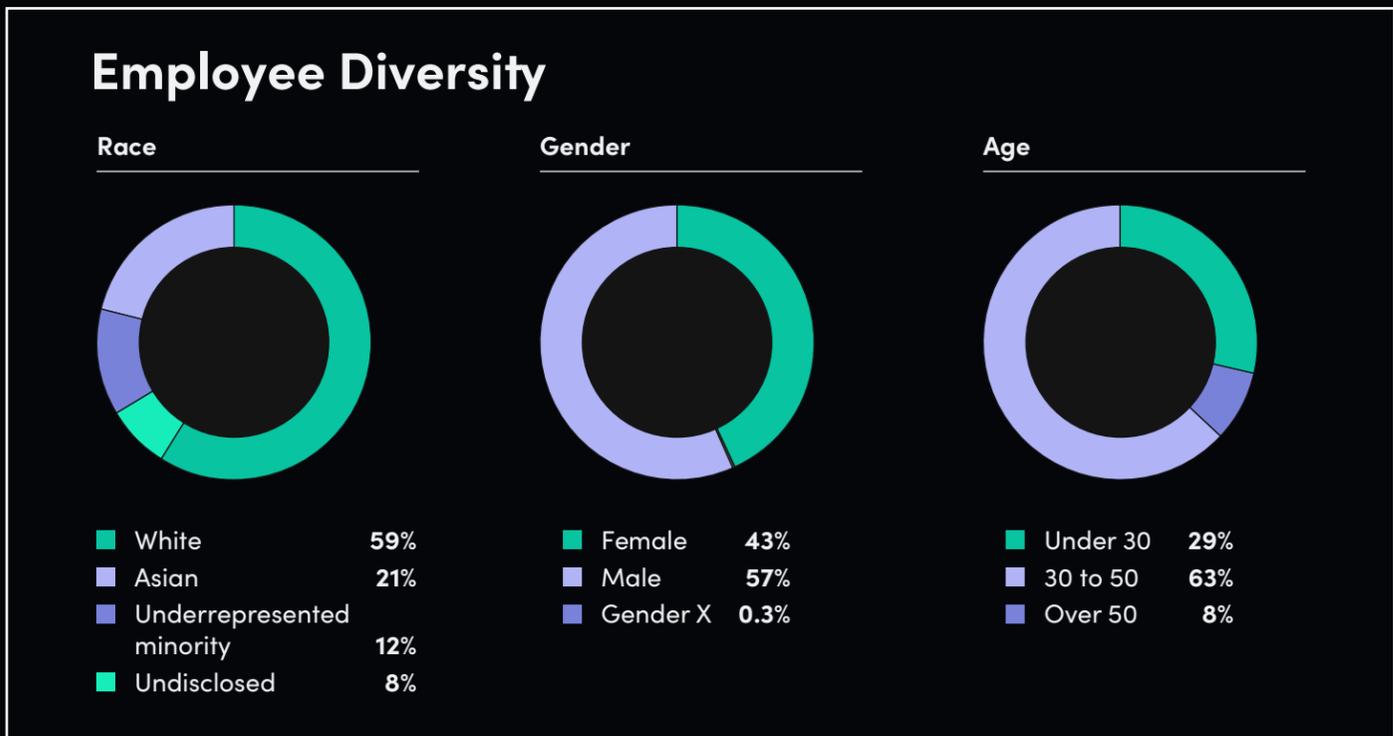
We have also revamped our mentorship program for underrepresented genders: we currently have six mentoring circles supporting Bioworkers across all teams and levels of seniority that provide a space for Bioworkers to discuss career progression, navigating team dynamics, pay equity issues, and other topics of concern for this community. Our Chief Operating Officer attends these mentoring circles to hear from and support the development of underrepresented gender Bioworkers.

We’ve also invested significantly in our People Team over the last year. After hiring our Head of Diversity, Equity, and Inclusion in December of 2020, we also brought on a Chief People Officer in 2021 and hired new Directors of Talent Acquisition, Talent Strategy and Growth, Compensation and People Solutions. In 2022, we also hired a Lead Recruiter for Early Talent

and Diversity to help build a strategic vision with DEI at its core. Working with this team, we are building systems for reporting, promotion, retention, professional development, and mentorship that engage with and recognize the unique circumstances our diverse team members face. Together, we’ve been able to design and build a strategic vision for the company incorporating DEI at Ginkgo from the ground up—not just how to increase the diversity of people who join our team but also designing a full spectrum of programs to support inclusion and equitable treatment for all members of our team.

We are in the process of building relationships with outside organizations—school organizations focused on underrepresented communities, Historically Black Colleges and Universities (“HBCUs”), labs and nonprofits—that help to increase access to bioengineering for communities who have historically been denied access. We have also launched a Supplier Diversity Program to consider the impact of our spend and how we can leverage our impact in the market to support diverse businesses ([page 34](#)).

Enhancing DEI will make Ginkgo a better company and a stronger platform for the world to utilize. We want to be more than just the best cell programming platform in the world: we want synthetic biology to be transformative, particularly for the most vulnerable.



Data accurate for Ginkgo’s employees based in the U.S.

Partnering with Diverse Suppliers In Our Supply Chains

As Ginkgo has grown, so has the supply chain that we depend on. Diversity within our supply chain is an important part of our efforts to ensure equitable distribution of benefits of our platform.

We work to engage and partner with diverse suppliers, including minority and small, underrepresented businesses, and we proactively look for opportunities to leverage our scale to positively influence our suppliers and their networks.

Based on 2021 data, over 40% of our supplier base is diverse, and over 30% of our spend within our supply chain goes to diverse suppliers, according to a mapping against D&B supplier diversity data.

By building a diverse supplier ecosystem, not only do we affirm our cultural values, we also enhance our competitive advantages. Our supplier diversity initiatives help us gain access to new networks of suppliers, unlock innovative solutions, and drive competition within the network - all of which helps Ginkgo achieve productivity and process efficiencies.

Further enhancing our supply chain vendor management policy and practices to continue to advance supplier diversity is a priority for 2022.

Supply Chain Diversity



Partnerships & Initiatives

Making Biotech Jobs More Accessible with BFCIT

The biotech industry's use of higher education degrees as a gating function for our jobs has caused us to exclude many communities from opportunities and left us with a talent pool that is too small to meet our goals. But as the bioeconomy becomes bigger and more mature, we have found that there are far more roles that do not require advanced degrees or even bachelor's for employees to be successful. Instead, we can build talent pipelines from schools that offer associate degrees, certificates, and apprenticeships—far more accessible training systems—to help build out our future workforce.

To help realize this vision, Ginkgo has partnered with Benjamin Franklin Cummings Institute of Technology ("BFCIT"), a thriving technical college that is in the midst of moving its campus to Roxbury, a Boston neighborhood with a majority of residents who identify as Black and LatinX. Ginkgo is providing support for the process of creating an Associates of Science in Biotechnology Manufacturing that would meet industry needs. BFCIT has a strong history of successfully preparing individuals from underrepresented communities for high-demand technical and trade careers, like construction management, cybersecurity, practical electricity and HVAC & Refrigeration. By advising and supporting BFCIT as they venture into the life sciences, Ginkgo is helping to ensure that future talent pipelines for the bioeconomy are more diverse and empowered. The curriculum will teach students cross-cutting core technical skills like fermentation, mass spectrometry, flow cytometry, and statistical analysis, as well as more applied skills like how to use standard operating procedures ("SOPs"), how to keep laboratory conditions sterile, and technical writing. The inaugural cohort of program participants is expected to enroll at BFCIT in the fall of 2023. Ginkgo has been committed to facilitating the success of this program since its inception and will maintain support through every phase.



Participants in the BFCIT biotech boot camp practice laboratory skills. Photo courtesy of BFCIT.

Growing the Black STEM Community through the Cultivate Fellowship

In fulfillment of our \$1 million commitment in 2020 to work toward mitigating the impact of the historic marginalization of Black scientists in STEM, we launched the Cultivate Fellowship. As part of this commitment, Ginkgo has two primary goals. First, we want to reduce the historical marginalization of Black students in STEM. Second, we want to provide networking and support opportunities for Black students in these fields.

Our Cultivate Fellowship partners with two organizations to do this: STEMNoire and Black Queer Town Hall. STEMNoire is an organization dedicated to supporting Black women PhDs. Black Queer Town Hall celebrates intersection and cultivating community for Black Queer excellence in science. The Fellowship is open to first-year, undergraduate students interested in a STEM education and careers, including those students in two and four-year institutions. As part of the fellowship program, we will provide career path exposure including information sessions featuring Synthetic Biology, Patent Law, Biosecurity, and Ethics, among others, to present the full range of career possibilities STEM provides. Beyond the experience at Ginkgo, Fellows will continue to receive support including a stipend for books every semester through graduation. The inaugural class includes 12 Fellows from nine different schools, including community colleges and HBCUs, and will visit Boston in July 2022.



Apprentices in the 2021 cohort of MassBioEd's Apprenticeship Program practice laboratory skills at Northeastern University. Photos courtesy of MassBioEd.

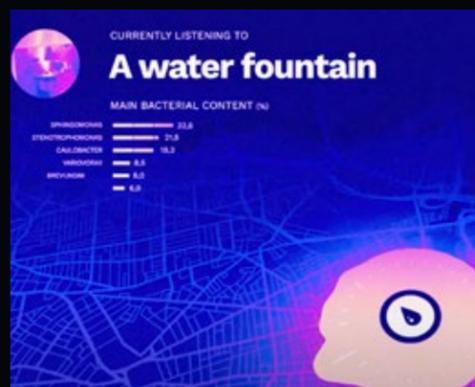
Supporting Apprentices From Underserved Communities with MassBioEd

The biotech industry has relied heavily on higher education to train our workforce. We expect formal, classroom settings to provide individuals with the knowledge to perform in our jobs. But there is another, often overlooked means of preparing people for professional roles: apprenticeships. Apprenticeships have been used for hundreds of years to allow new entrants to learn skills directly from experts through shadowing and coaching. We believe that many bioeconomy roles can be learned through this model and have signed up to participate in the MassBioEd Apprenticeship Program for 2022. This 16-month program provides opportunities for members of underserved communities by matching four months of free, stipended classroom and laboratory education by MassBioEd and Northeastern University followed by one year of paid on-the-job training at a company. Three participants will begin the MassBioEd training in Spring 2022 and start their apprenticeships at Ginkgo in Fall 2022.

Fostering Leadership Among Underrepresented Minority High School Students with The Bridge Program and Biota Beats

To be good stewards of synthetic biology, we must ensure that the communities Ginkgo neighbors within are included in our work. The Bridge Program is a new learning and leadership initiative developed by the 7uice Foundation, founded by the Boston Celtics' Jaylen Brown and his family, and the Community Biotechnology Initiative at the MIT Media Lab. The program's mission is to help cultivate the next generation of leaders in science and technology and is designed for young people from underrepresented minority communities in 8th-12th grade in the Boston metro area. The program provides a 12-week curriculum that spans across a variety of topics, ranging from storytelling to civics to team building, and explores several career paths in synthetic biology, artificial intelligence, and blockchain. Ginkgo participated in the inaugural year of the program in 2021, leading two courses and exploring synthetic biology applications around the world.

We also collaborated with Biota Beats, an interdisciplinary program that translates biodiversity into music and is run by the same team from MIT Media Lab, to create an interactive experience for the Bridge Program students. To sample the microbiome that lives around them, students swabbed places that are meaningful to them: places where they learn, places that are meaningful to their communities, and places that are meaningful to their families. These swabs were sequenced by Ginkgo to generate the underlying microbial fingerprint of each object or location, and the Biota Beats team then used that data to generate visual and musical artwork. The result was a spectacular piece that brought together community outreach, science education, and artistic expression.



Graduates of the BioBuilder Apprenticeship Program hold up their certificates of completion. Photo courtesy of BioBuilder.



Above: Bioentrepreneurship university students from Spain visiting the BioBuilder Learning Lab @ Ginkgo. Photo courtesy of BioBuilder.

Left: From top to bottom: Bridge Program Founder Jaylen Brown shares highlights at Ginkgo Ferment 2021; students from the inaugural cohort; Founder David Sun Kong introduces the Boston Biota Beats; a student's swab sequenced, visualized, and sonified.

Enabling Hands-on Synthetic Biology Training with BioBuilder

For the bioeconomy to reach its potential, we want students to fall in love with synthetic biology while they are in school. Since 2011, BioBuilder has been at the forefront of synthetic biology education. They design open-access curricula that leverage authentic research questions and emphasize hands-on laboratory training, partnering with schools throughout the U.S. and around the world to create meaningful educational opportunities that engage students as problem solvers. BioBuilder also runs unique programs for teachers and students of all ages in the Boston area with a specific focus on underserved communities. To support their mission, Ginkgo has donated a teaching laboratory space, the BioBuilder Learning Lab @ Ginkgo, to the organization in the same building as our headquarters. This proximity allows us to provide support in a variety of ways and deepen our connections to the program. For example, groups of BioBuilder students often get to tour our foundries, Ginkgo is able to highlight BioBuilder's activities at our in-person events, and Ginkgo employees without backgrounds in biology participate in customized BioBuilder programming to increase their expertise.

Supporting Young Innovators with iGEM

The potential to deploy synthetic biology in a wide array of applications to solve difficult problems should be explored by young innovators all over the world. The International Genetically Engineered Machine (“iGEM”) competition provides the opportunity to do just that. Co-founded by Ginkgo Founder Tom Knight in 2004, the iGEM competition now includes teams of high school, undergraduate, and graduate students and community laboratories from 46 different countries, all of whom develop a synthetic biology project of their own design. Before Ginkgo was created, our Founders participated in the 2004 competition with a project to create banana scent in bacteria. Ginkgo is a platinum-level sponsor of iGEM to help ensure the program’s impact and growth. However, because iGEM requires access to facilities and financial support that many teams lack, there is an inherent barrier to entry that bars many communities from participating.

To help bridge this gap, Ginkgo partnered with iGEM Design League, which is designed to ensure more equitable access for Latin American teams by focusing on projects that don’t require access to physical laboratories and instead focus on biological design using digital tools. In the first year of the program, 480 students across 25 teams and 8 countries were able to work to use biology to solve local problems and join the iGEM community through the Design League model. In 2021, Ginkgo employees served as judges and mentors for the Design League program. Ginkgo is also helping winning teams bring their designs into the build and test phases of the engineering cycle by providing synthetic DNA constructs in an on-site experience at Ginkgo’s facilities in Summer 2022. iGEM Design Leagues are under active development in other parts of the world, such as India and Africa.



iGEM students at the 2019 Annual Jamboree in Boston. Photo courtesy of iGEM Foundation.

Engaging The Next Generation of Leaders with Race Against the Clock at Built with Biology

Actively including the next generation of brilliant minds in the synthetic biology community is imperative to our company’s success, our field’s growth, and the progress that can be made for humanity and the natural world. Ginkgo partnered with the largest gathering of the synthetic biology community — the Built With Biology conference (formerly known as SynBioBeta)—to launch a new day-long component of their event called “Race Against the Clock” (“RATC”). The purpose of this portion of the conference was to invite and include people who are early in their synthetic biology careers into the larger industry gathering. For its inaugural year in 2022 (originally scheduled for 2021), Ginkgo sponsored the RATC portion of the event and sponsored 500 tickets so students, new Founders, and other young people entering the synthetic biology space could attend for free.

Participants had a wide range of education levels and backgrounds. They came from high schools, colleges, and graduate institutions, had science and non-science backgrounds (e.g., business, marketing, programming, art, and design), and came from countries around the globe.

Strengthening Laboratory Network Capacity with Africa CDC

COVID-19 made clear the importance of building systems that enable communities to understand the biology around them and respond to it. However, according to the Africa CDC, public health pathogen genomics capacity remains limited in Africa, despite the high burden of endemic infectious diseases and the fact that many infectious diseases that have emerged or re-emerged in Africa.

Ginkgo has partnered with Africa CDC’s Institute of Pathogen Genomics to better integrate pathogen genomics and bioinformatics into public health surveillance and outbreak investigations, and to improve disease control and prevention across the continent’s public health institutions.

As part of this collaboration, Ginkgo has joined with partners at Rockefeller Foundation to improve automation capacity at the African Center of Excellence For Genomics of Infectious Diseases in Nigeria (“ACEGID”)—including by providing equipment and transferring essential technology processes and know-how. These efforts are expected to address key bottlenecks, optimize use of limited resources, and help unlock transformational opportunities in pathogen surveillance and across the bioeconomy writ large.



Ginkgo works alongside partners to improve automation at ACEGID in Nigeria.



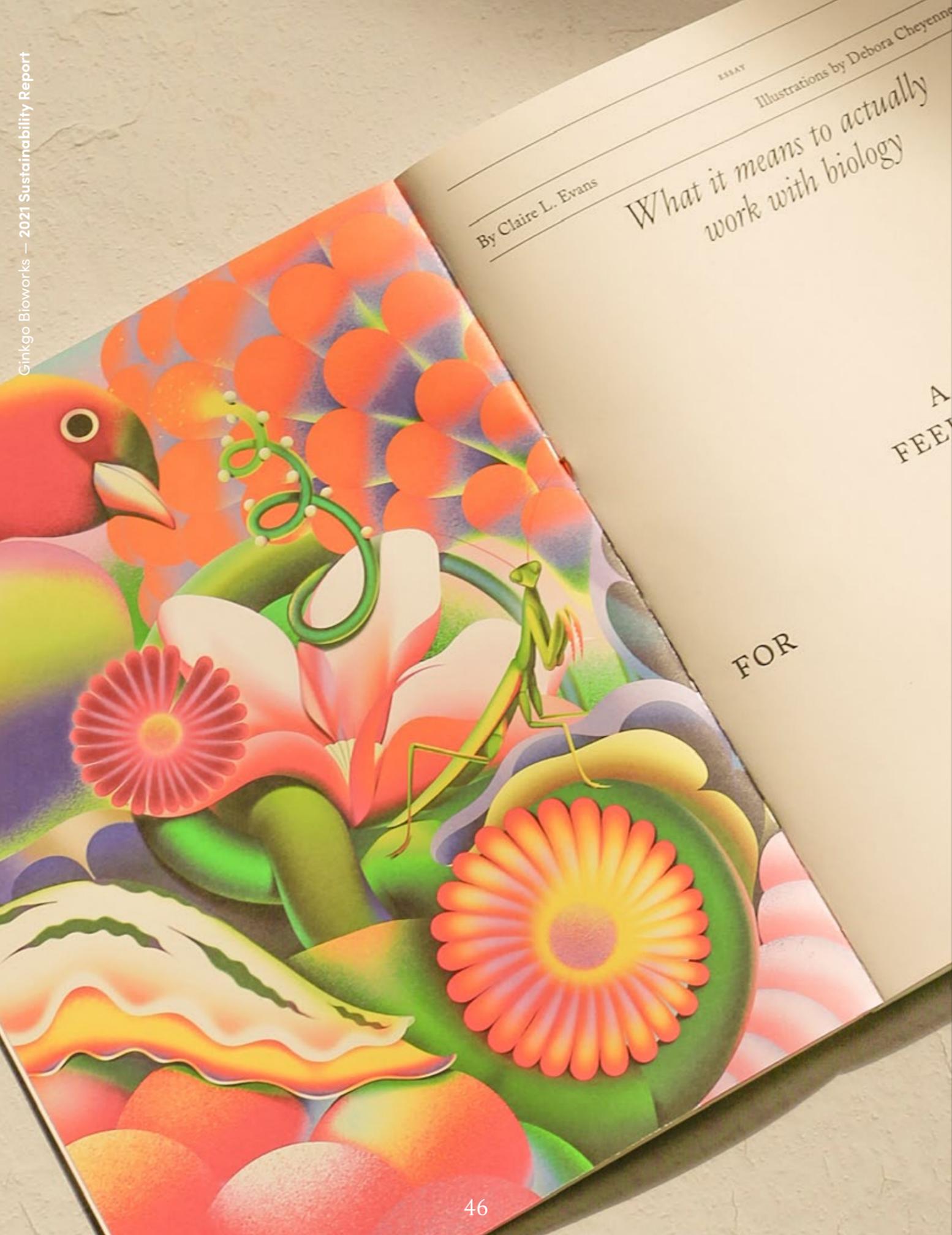
Ginkgo team members volunteering with Hyde Square Task Force, which works to build a diverse, vibrant Latin Quarter in Boston.

Supporting Giving and Volunteering through Ginkgo Gives

Bioworkers are an extraordinarily caring community. In the past, we have seen this generosity manifest itself through several philanthropic initiatives driven by Bioworkers, including raising money for COVID relief in India, multiple Bioworker matching donations for food banks, our annual Safe Homes fund drive for LGBTQ+ youth and others.

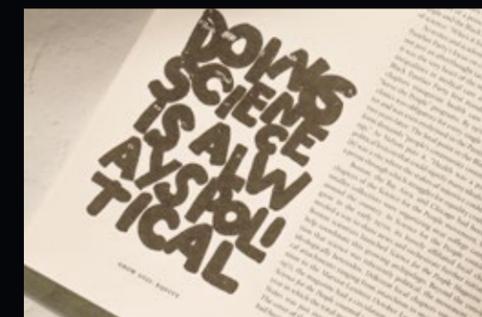
To further encourage giving at Ginkgo, we launched Ginkgo Gives in early 2021. Ginkgo Gives is our first formal volunteering and matching program. Within this program, Ginkgo grants \$2,000 to organizations that Bioworkers support through volunteerism, and matches up to \$500 per employee in monetary donations.

A “Ginkgo Gives Committee”, which is decided in part by nominations and an election among Bioworkers, is meant to oversee the program and, every year, will highlight particular organizations that align strongly with Ginkgo’s mission and values.



Sharing Ideas and Nurturing New Perspectives through Grow by Ginkgo

A new industry can spark a new culture and new points of view. In the 1930s, IBM launched Think magazine, to help people understand the potential and possibilities of data processing and computing. A new industry working to design with nature offers endless possibilities and complexities that we need to explore culturally as well as technically. As we build a new industry, we want to nurture different points of view about synthetic biology, shaped by many voices and perspectives. Grow Magazine, which we publish digitally every month and in print once a year, allows us to bring together a wide range of writers, designers, practitioners and academics with different identities and from different parts of the world to write about important themes that matter—from nature, to beauty, to our future. In 2021, alongside our debut on the public markets, we released the Equity Issue, in which we explored two sides of the word equity, meaning both fairness and justice as well as ownership and governance of corporations. How has biology contributed to inequities in our society? How could our field contribute to a fairer world in the future? How does the structure of corporate ownership and governance influence the impacts of powerful technologies? Contributors explored empathy in lab science, the legacy of biological essentialism in medicine, and what plant polycultures can teach us about justice, encouraging our readers to see things from the point of view of the living systems we collaborate with—to develop a “feeling for the organism,” to challenge our assumptions about health and inequality, and to create a more thriving and robust ecosystem for science where more diverse voices can bloom.



Bringing Together and Growing Our Community through Ginkgo Ferment

Ginkgo Ferment is our annual conference that celebrates making biology easier to engineer. Every year, we bring together our community—including scientists and engineers, researchers from academia and industry, our suppliers and customers, policymakers, business leaders, students, designers, and artists to inspire new ways of thinking about biology, our cell programs, inspire new connections and collaborations that strengthen the industry, and to collectively consider our path forward together.

Ginkgo has convened Ferment in 2018, 2019, and 2021. Ferment 2021 gathered over 1,000 stakeholders from across the synthetic biology ecosystem and the Ginkgo community, and, among other things, highlighted key technology and policy issues, opportunities in health and medicine, sustainable investment, and our partnership with the Boston “Bridge Program,” an initiative dedicated to cultivating the next generation of young leaders in science and technology from underprivileged communities.

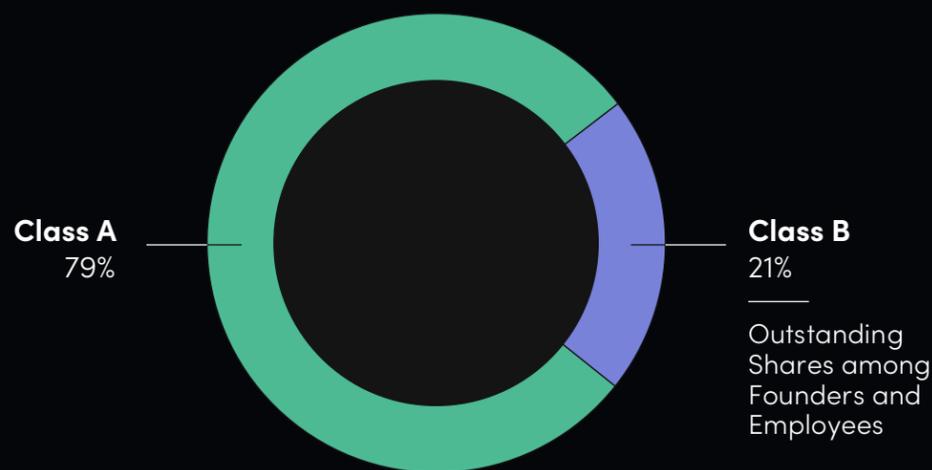


Facilitating Multidisciplinary Creation in Art and Policy through the Creative Residency and Public Policy Fellowship

For synthetic biology to flourish, we need experts from a wide range of disciplines influencing the direction of our field and exploring the larger social contexts of which synthetic biology inventions would be part. But for our work to advance social progress, we have to look across different disciplines and facilitate conversations around what we want to see in society. This is why Ginkgo sponsors artists and policy leaders to come and collaborate with us every year. Founded in 2017, the Ginkgo Creative Residency is a collaboration with the design agency Faber Futures to provide an experimental platform for creative thinkers to explore both the potential and implications of synthetic biology. Past residents have dyed textiles with biopigments, created artifacts to demonstrate decay, and written a speculative fiction story on the world of Cykofa. In 2021, Ginkgo adapted this model for the policy world. We launched the Ginkgo Public Policy Fellowship to give space for emerging leaders in synthetic biology policy to develop projects on a social topic of their choosing. Our inaugural fellows wrote a Cyan Collar handbook and created the Bioeconomy Coalition of Uganda.

Ownership is the First Step in Caring

Bioworkers Own Class B Shares, Which Hold 10 Votes per Share



As of December 31, 2021

The individuals who work at Ginkgo and build our platform care deeply about how that platform is used and the impact our company will have in the world. Ownership is the first step in caring how our platform is used, and, as employees, we have an outsized influence on how our platform is developed and deployed.

We believe a workforce with strong equity ownership will make the wise decisions needed to build long-term value for our company, and to build a company whose long-term impacts make them proud. That is why we have implemented a multi-class stock structure that permits all employees (current and future), not just Founders, to hold high-vote (10 votes per share) common stock. We believe that our multi-class stock structure will help maintain the long-term mentality we have benefited from as a Founder-led company.



Platform Governance

Bioworkers hold 10x voting power with their Class B shares

As designers of the largest horizontal platform for cell programming, we are keenly aware of the need to care about how our platform is used. In fact, based on the findings of our 2021 materiality assessment (see pages 60–61), both internal and external stakeholders agreed that “platform governance” is a material ESG issue for Ginkgo.

While digital platforms provide a helpful metaphor to appreciate Ginkgo’s platform and the biological applications we help power, we see some important distinctions when it comes to platform governance.

Specifically, while there has been some tolerance for digital platforms to take a hands-off approach to content and applications, we think approaching biology similarly would be unwise. After all, digital technologies are inherently separate from us—but we are biology. Biology drives our health and makes up our bodies, our food, and our environment. We simply cannot afford to be neutral stewards of biology.

Ginkgo cares—and must care—how our platform is used, and we strive to ensure that the risks and benefits of our work are transparently and equitably shared. Active transparency is vital to ensure that all stakeholders are informed and enables us to think through challenging topics together.

The issues that we might encounter are difficult with many competing priorities and perspectives. Therefore, caring

isn’t something that Ginkgo can finish—it’s an ongoing process. To care for and about something is to be involved for the long haul. In rare situations, there are bright lines and clear reasons to say “no” to particular applications. But problems and their solutions are never just technical, and caring is about seeking to understand that complexity and finding partnerships, policies, and practices that can enable solutions. We apply and regularly refine evaluation frameworks, processes and procedures to address complexities we face, while also working to better enable people from diverse backgrounds and with diverse perspectives to raise their concerns and questions and to have their voice be part of the process.

We trust that our employees will help make the best decisions for the long-term value of Ginkgo and our mission. We believe that a diverse and inclusive team is the best way to ensure that our platform is used for the benefit of all.

Our Board

Ginkgo's Board of Directors (the "Board") is responsible for overseeing the direction of the Company. The Chair of the Board is selected by the Board and currently is Marijn Dekkers. Jason Kelly, Ginkgo's Chief Executive Officer and Founder, and Reshma Shetty, Ginkgo's President, Chief Operating Officer and Founder, currently serve on the Board. The Board believes that this leadership structure is appropriate given Drs. Kelly and Shetty provide valuable insight to the Board due to the perspective and experience they bring as Founders and officers. The Board also believes that this leadership structure improves the Board's ability to focus on key policy and operational issues and helps the Company operate in the long-term interests of shareholders.

Currently, of our eight directors, two are women, three are from an underrepresented racial/ethnic group, and four have served for five or fewer years. A majority of our directors are independent under NYSE corporate governance standards. Our Board's composition also represents a balanced approach to director tenure, allowing the Board to benefit from the experience of longer-serving directors combined with fresh perspectives from newer directors.

The Board has extensive involvement in the oversight of risk management related to Ginkgo and its business and accomplishes this oversight through the regular reporting to the Board by the Audit Committee. The Audit Committee represents the Board by periodically reviewing Ginkgo's

accounting, reporting and financial practices, including the integrity of its financial statements, the surveillance of administrative and financial controls and its compliance with legal and regulatory requirements. Through its regular meetings with management, including the finance, legal, internal audit and information technology functions, the Audit Committee reviews and discusses all significant areas of Ginkgo's business and summarizes for the Board all areas of risk and the appropriate mitigating factors. In addition, the Board receives periodic detailed operating performance reviews from management.

Our Board and management team leverage their cumulative experiences and consider the interests of all stakeholders, including stockholders, customers, employees, suppliers, academic researchers, governments, and communities, to pursue long-term value for our company and drive the sustained health of our global community.



Jason Kelly
Founder



Reshma Shetty
Founder



Marijn Dekkers
Chairperson



Christian Henry
Audit Committee Chair



Shyam Sankar
Compensation Committee Chair



Harry E. Sloan



Reshma Kewalramani
Nominating & Corporate Governance
Committee Chair



Arie Beldegrun

Closing Thoughts

When we went public last fall, we made a point, in our filings, to share that “ESG is in our DNA”.

Indeed, our commitment to the principles and priorities of ESG long predates Ginkgo’s listing as a publicly traded company. “Caring how our platform is used” has always been a key lens through which we consider the choices we make as we grow our business, and, since 2020, it has been a company-wide objective and key result (“OKR”).

Still, formal ESG reporting is a new function at Ginkgo, and we are in the process of developing the procedures required for comprehensive disclosures. That said, we are proud of the progress we have made in this first report, and we will continue to advance our reporting capabilities as we move forward.

We are looking forward to using this report, and future reporting activities, to inform our decisions moving forward.



Appendix

Intro

ESG reporting at Ginkgo is driven by a collaboration between our Policy and Partnerships team and our Corporate Development team, relying on regular input from a large, cross-company “ESG Reporting Working Group”, which includes Bioworkers from Facilities, Environmental, Health and Safety, Finance, Legal, People Operations, Marketing, Government Affairs, and regularly engages with Ginkgo leadership (page 74).

This inaugural report is guided by several key ESG frameworks and standards, as well as a third-party led materiality assessment which was informed by thorough stakeholder engagement.

Stakeholder Engagement

Stakeholder engagement is a critical input that informs our broader ESG strategy (page 14). We engaged with several key stakeholder groups, including customers, community partners, investors, suppliers, employees, regulators, and ESG raters, either via interview, survey, or research as a proxy, to consider ESG topics and assess impacts on/of the organization.

These stakeholder insights were leveraged to evaluate the importance of key ESG topics. Experts across the business and within our ESG Reporting Working Group determined the opportunities and risks associated with each of these topics.

For the purpose of our stakeholder materiality assessment, we relied on the Global Reporting Initiative (“GRI”) definition of “materiality.” According to GRI, material topics represent an organization’s most significant impacts on the economy, environment and people, including impacts on their human rights.

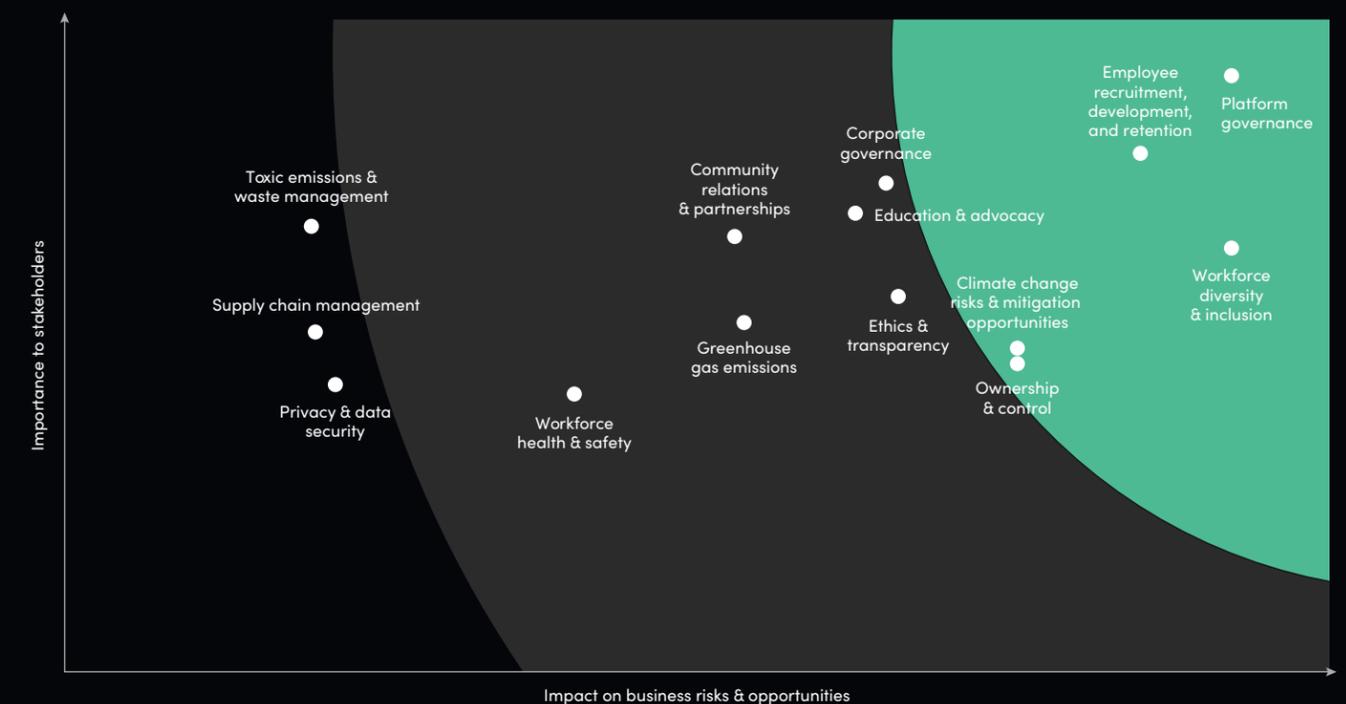
Based on stakeholder input, topics were grouped into the following matrix. Going forward, we intend to continue to align our ESG performance and reporting to these topics, as well as regularly revisit these topics to ensure that we remain focused on our stakeholders’ evolving top priorities where we can have the biggest impact.

ESG Materiality Assessment: Process Overview

A systematic process for stakeholder engagement and feedback prioritization



ESG Materiality Matrix



For the avoidance of doubt, even if a topic is not considered “critical” or reflected on the ESG Materiality Matrix, the Company gives due consideration to such topics, as needed, for legal and compliance purposes and to promote good governance practices within the organization. The Company is focused on applicable CSR- and ESG- related matters as part of its compliance initiatives.

Reporting Frameworks

Global Reporting Initiative

The Global Reporting Initiative (“GRI”) Sustainability Reporting Standards identify the most relevant issues for inclusion in sustainability reports. The standards enhance the comparability and quality of information on economic, environmental and social impacts organizations have. They also create a common language to communicate that information to various stakeholders.

“Materiality” has the definition given to that term by the Global Reporting Initiative. GRI does not define materiality the same as the U.S. federal securities laws. Topics that are material for purposes of our GRI disclosures are not necessarily material for purposes of the U.S. federal securities laws and their inclusion in our GRI reporting should not be construed as an admission of materiality for purposes of investment or voting decisions or other purposes.

The reported GRI topics and disclosures below refer to GRI 1: Foundation 2021.

GRI standard	Disclosure	Location	Page(s)	
GRI 2: General Disclosures 2021	2-1	Organizational details	FY21 Form 10-K	Cover page, 90
	2-2	Entities included in the organization’s sustainability reporting	Ginkgo Bioworks Holdings, Inc.	
	2-3	Reporting period, frequency and contact point	Unless otherwise indicated, this report pertains to the period of January 1, 2021–December 31, 2021. Ginkgo aims to issue sustainability reports on an annual basis. Please contact Ryan Morhard (Director, Policy and Partnerships) at esg@ginkgobioworks.com with any ESG reporting inquiries.	
	2-4	Restatements of information	Not Applicable	
	2-5	External assurance	No external assurance has been pursued at this time.	F-2
	2-6	Activities, value chain and other business relationships	FY21 Form 10-K	1, 6, 8, 11, 21, 44, 45
	2-7	Employees	2021 Sustainability Report	10
	2-8	Workers who are not employees	At this time, Ginkgo treats this information as confidential.	
	2-9	Governance structure and composition	Board Composition	
	2-10	Nomination and selection of the highest governance body	Nominating and Corporate Governance Committee Charter	1
	2-11	Chair of the highest governance body	The Board Chair is Marijn Dekkers .	
	2-12	Role of the highest governance body in overseeing the management of impacts	Ginkgo’s Charter and Bylaws	Charter: Article VII – Directors; Bylaws: Article III – Directors
	2-13	Delegation of responsibility for managing impacts	The Board oversees but delegates day-to-day affairs, including Ginkgo’s impacts on the economy, environment, and people, to executive management as outlined in the Bylaws .	Bylaws: Article III – Directors
	2-14	Role of the highest governance body in sustainability reporting	2021 Sustainability Report	60
	2-15	Conflicts of interest	Corporate Governance Guidelines	1

GRI standard	Disclosure	Location	Page(s)	
GRI 2: General Disclosures 2021 (continued)	2-16	Communication of critical concerns	Code of Business Conduct and Ethics	1–2
	2-17	Collective knowledge of the highest governance body	FY22 Proxy Statement	8–14
	2-18	Evaluation of the performance of the highest governance body	Nominating and Corporate Governance Committee Charter	2
	2-19	Remuneration policies	FY21 Form 10-K—Director Compensation	121–123
	2-20	Process to determine remuneration	FY21 Form 10-K—Director Compensation	121–123
	2-21	Annual total compensation ratio	As a newly public company, Ginkgo plans to report on this ratio next year. For now, information on our CEO's compensation and compensation of our leadership team can be found on page 37, 38 of our FY22 Proxy Statement	37–38
	2-22	Statement on sustainable development strategy	2021 Sustainability Report	12–13
	2-23	Policy commitments	2021 Sustainability Report	6
	2-24	Embedding policy commitments	2021 Sustainability Report	6
	2-25	Processes to remediate negative impacts	Code of Business Conduct and Ethics	1
	2-26	Mechanisms for seeking advice and raising concerns	Code of Business Conduct and Ethics	1–2
	2-27	Compliance with laws and regulations	Code of Business Conduct and Ethics	5–7
	2-28	Membership associations	Education and advocacy are priorities for Ginkgo. We engage in advocacy organizations (e.g., the Biotechnology Innovation Organization, the Synthetic Biology Coalition), educational initiatives (e.g., the International Genetically Engineered Machine Competition), and with industry consortia (e.g., the International Gene Synthesis Consortium). We plan to share a more fulsome list in future reports.	
	2-29	Approach to stakeholder engagement	FY22 Proxy Statement 2021 Sustainability Report	16–17 12–13
2-30	Collective bargaining agreements	As of December 31, 2021, none of our U.S. employees are covered by collective bargaining agreements.		
GRI 3: Material Topics 2021	3-1	Process to determine material topics	2021 Sustainability Report	60–61
	3-2	List of material topics	2021 Sustainability Report	61
	3-3	Management of material topics	2021 Sustainability Report	60–61

GRI standard	Disclosure	Location	Page(s)	
GRI 201: Economic Performance 2016	201-1	Direct economic value generated and distributed	FY21 Form 10-K	102
	201-4	Financial assistance received from government	Not Applicable. Ginkgo did not receive financial assistance from the government in FY21.	
GRI 205: Anti-corruption 2016	205-2	Communication and training about anti-corruption policies and procedures	Anti-Corruption Policy	
	205-3	Confirmed incidents of corruption and actions taken	None	
GRI 306: Waste 2020	306-1	Waste generation and significant waste-related impacts	2021 Sustainability Report	26–27
	306-2	Management of significant waste-related impacts	2021 Sustainability Report	26–27
	306-3	Waste generated	2021 Sustainability Report	26–27
	306-4	Waste diverted from disposal	2021 Sustainability Report	26–27
	306-5	Waste directed to disposal	2021 Sustainability Report	26–27
GRI 403: Occupational Health and Safety 2018	403-6	Promotion of worker health	We are committed to building a culture of empowered employees dedicated to maintaining a safe and healthy workplace, and managing any potential Environmental Health and Safety risks. The number and rate of fatalities as a result of work-related injury was zero. High-consequence work-related injuries (excluding fatalities) was zero. Recordable work-related injuries were zero. Main types of work-related injury were first aids, minor lacerations, contusions, burns, and ergo discomfort. The number of hours worked was 1,116,755.	
	403-9	Work-related injuries	Code of Business Conduct and Ethics	8–9
GRI 404: Training and Education 2016	404-1	Average hours of training per year per employee	Ginkgo plans to implement mechanisms to report this information in the future. Today, in addition to onboarding training and regular health and safety training, where appropriate, Ginkgo also offers a variety of training for professional development, including: People Management Academy; Level Up with BetterUp Leadership Coaching; Character Club; and a new course on Program Management. All Bioworkers also have access to a third-party professional coaching service.	
GRI 405: Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	2021 Sustainability Report	32–33 , 52 , 55

Reporting Frameworks

Stakeholder Capitalism Metrics

In September 2021, Ginkgo joined over 100 of the world's leading companies in committing to report on the Stakeholder Capitalism Metrics. These metrics are the result of a collaboration between the International Business Council at the World Economic Forum, along with Deloitte, EY, KPMG and PwC, and are meant to improve the ways that companies measure and demonstrate their performance against ESG indicators and to enable positive contributions towards achieving the United Nations Sustainable Development Goals ("SDGs"). The metrics and disclosures are drawn from existing standards.

There are instances where reporting is not yet feasible (such as Pillar 2: Planet), or where we determined that the disclosure is not relevant to our business. We aim to expand our disclosures in the future.

Pillar 1: Principles of Governance

Core Metrics	Disclosures	Response and/or Reference	Related Standards
Governing Purpose			
Setting purpose	The company's stated purpose, as the expression of the means by which a business proposes solutions to economic, environmental, and social issues. Corporate purpose should create value for all stakeholders, including shareholders	A letter from our Founders —Ginkgo Bioworks	The British Academy and Colin Mayer, GRI (102-26), EPIC, and others
Quality of Governing Body			
Governance body composition	Composition of the highest governance body and its committees by: competencies relating to economic, environmental, and social topics; executive or non-executive; independence; tenure on the governance body; number of each individual's other significant positions and commitments, and the nature of the commitments; gender; membership of under-represented social groups; stakeholder representation	Board of Directors Committee Composition See Item 10 of the 2021 10-K for a description of Board and Committees.	GRI (102-22), GRI (405-1a), IR (4B)
Stakeholder Engagement			
Material issues impacting stakeholders	A list of the topics that are material to key stakeholders and the company, how the topics were identified, and how the stakeholders were engaged	We've identified the following as Ginkgo Bioworks' material issues (in alphabetical order): <ul style="list-style-type: none"> • Climate Change Risks and Mitigation Opportunities • Community Relations and Partnerships • Corporate Governance • Education and Advocacy • Employee Recruitment, Development, and Retention • Ethics and Transparency • Greenhouse Gas Emissions • Ownership and Control • Platform Governance • Privacy and Data Security • Supply Chain Management • Toxic Emissions and Waste Management • Workforce Diversity and Inclusion • Workforce Health and Safety For more information about our approach to materiality and stakeholder engagement, see page 60–61.	GRI (102-21), GRI (102-43), GRI (102-47)

Core Metrics	Disclosures	Response and/or Reference	Related Standards
Ethical Behavior			
Anti-corruption	<p>1. Total percentage of governance body members, employees and business partners who have received training on the organization's anti-corruption policies and procedures, broken down by region</p> <p>2. (a) Total number and nature of incidents of corruption confirmed during the current year but related to previous years (b) Total number and nature of incidents of corruption confirmed during the current year, related to this year</p> <p>3. Discussion of initiatives and stakeholder engagement to improve the broader operating environment and culture, in order to combat corruption</p>	<p>1. Among full time employees at Ginkgo, 95% have taken anti-bribery and anti-corruption training. This training is mandatory for all full-time Ginkgo employees across all regions.</p> <p>2. Ginkgo does not have a record of any anti-corruption incidents. Because the vast majority of Ginkgo's personnel and operations are in the U.S. and its international business is predominantly with very large multinationals, the risks are relatively low.</p> <p>3. Ginkgo continues to emphasize a culture of compliance, and maintains mechanisms to give heightened attention to areas identified as presenting potential anti-corruption risk.</p>	GRI (205-2) and GRI (205-3)
Protected ethics advice and reporting mechanisms	<p>A description of internal and external mechanisms for</p> <p>1. Seeking advice about ethical and lawful behaviour and organizational integrity;</p> <p>2. Reporting concerns about unethical or lawful behaviour and organizational integrity</p>	Code of Business Conduct and Ethics—Ginkgo Bioworks	GRI (102-17)

Pillar 3: People

Core Metrics	Disclosures	Response and/or Reference	Related Standards
Dignity and Equality			
Diversity and inclusion (%)	Percentage of employees per employee category, per age group, gender and other indicators of diversity (e.g. ethnicity)	<p>(i) Gender: Female – 43.1% Male – 56.5% GenderX – 0.3%</p> <p>(ii) Age group Under 30 – 28.8% 30 to 50 – 63% Over 50 – 8.2%</p> <p>(iii) Ethnicity Asian – 21% White – 59% Underrepresented Minority – 12.4% Undisclosed – 7.6%</p>	GRI 405-1 (b)
Pay equality	Ratio of the basic salary and remuneration for each employee category by significant locations of operation for priority areas of equality: women to men; minor to major ethnic groups; and other relevant equality areas	<p>To ensure compensation decisions are consistently made based on merit and not subject to bias due to gender and/or race/ethnicity, Ginkgo centralizes pay decisions to a hiring committee. This committee currently consists of two of our Founders, our Chief People Officer, and our Director of Total Rewards. The committee reviews all hiring requests and approves total compensation for each candidate. A subgroup of this team is responsible for regular pay adjustments for existing team members.</p> <p>In addition to this centralized review process, Ginkgo regularly runs the following programs to ensure consistent and fair practices:</p> <ul style="list-style-type: none"> • Talent review & promotion planning • Performance reviews • Annual salary adjustments • Internal pay equity analyses <p>Given Ginkgo's significant headcount growth and its commitment to ensuring a fair and equitable review process, Ginkgo is engaging with a third-party firm to conduct a pay equity analysis in 2022. This review is expected to continue to be conducted periodically and adjustments will be taken as deemed appropriate following such reviews.</p>	Adapted from GRI 405-2

Core Metrics	Disclosures	Response and/or Reference	Related Standards
Wage level		<p>At Ginkgo we are committed to fair and equitable pay for all Bioworkers. We strive to pay competitive salaries to both attract and retain our talent, but further to drive ownership across our entire team to ensure our employees achieve financial success in line with Ginkgo's success. All employees receive equity at Ginkgo. To reinforce this commitment, in December of 2021, The Company communicated a spot award of 40,000 RSUs to each active employee, in addition to the awards being delivered during our annual compensation process.</p> <p>Our salary bands are regularly reviewed against a reputable third-party compensation survey to ensure every Bioworker is competitively paid for their contribution to making biology easier to engineer. We align salary bands to ensure all team members are paid at or above the median salary of the market for their role and geographic work location.</p>	GRI 202-1, UK Companies (Misc. reporting) regulations 2018, Dodd-Frank Act
	1. Ratios of standard entry-level wage by gender compared to local minimum wage	Our entry level base salaries are at least two times the local minimum wage regardless of gender or race across all of our locations and labs both US and globally.	
	2. Ratio of CEO's total annual compensation to median total annual compensation of all employees (excluding the CEO)	Ginkgo expects to report on this ratio next year. For now, information on our CEO's compensation and compensation of our leadership team can be found on page 37-38 of our FY22 Proxy Statement	
Risks for incidents of child, forced or compulsory labour	An explanation of the operations and suppliers considered to have significant risk for incidents of child labour, forced or compulsory labour. Such risks could emerge in relation to type of operation (such as manufacturing plant) and type of supplier; or countries or geographic areas with operations and suppliers considered at risk.	Not believed to be material, given the nature of our business.	GRI 408-1 (b), GRI 409

Core Metrics	Disclosures	Response and/or Reference	Related Standards
		Health & Wellbeing	
Health and safety (%)	1. The number and rate of fatalities as a result of work-related injury; high-consequence work-related injuries (excluding fatalities); recordable work-related injuries, main types of work-related injury; and the number of hours worked	<p>We are committed to building a culture of empowered employees dedicated to maintaining a safe and healthy workplace, and managing any potential Environmental Health and Safety risks.</p> <p>(i) 0 fatalities (ii) 0 high-consequence work-related injuries (iii) 0 recordables in 2021 (iv) Main types of injury were first aids; minor lacerations, contusions, burn, ergo discomfort. (v) 1,116,755 hours worked</p>	GRI:2018 403 – 6 (a)
	2. An explanation of how the organization facilitates workers' access to non-occupational medical and healthcare services and the scope of access provided for employees and workers	Ginkgo provides full-time and part-time employees working 20 hours or more per week with a comprehensive benefits package. Workers have the choice between two medical insurance plans which are part of a nationwide network and provide coverage for in-network and out-of-network services. The benefits package also provides options for H.S.A./FSA, dental, vision, life and AD&D, accident, group legal, and STD/LTD.	
		Skills for the Future	
Training provided (#)	1.Average hours of training per person that the organization's employees have undertaken during the reporting period, by gender and employee category (total number of trainings provided to employees divided by the number of employees) 2.Average training and development expenditure per full time employee	<p>Ginkgo plans to implement mechanisms to report this information in the future.</p> <p>Today, in addition to onboarding training and regular health and safety training, where appropriate, Ginkgo also offers a variety of training for professional development, including: People Management Academy; Level Up with BetterUp Leadership Coaching; Character Club; and a new course on Program Management.</p> <p>All Bioworkers also have access to a third-party professional coaching service.</p>	GRI 404-1, SASB HC0101-15

Pillar 4: Prosperity

Core Metrics	Disclosures	Response and/or Reference		Related Standards		
Employment and Wealth Generation						
Absolute number and rate of employment	1. Total number and rate of new employee hires during the reporting period, by age group, gender, other indicators of diversity and region	(i) Gender		Adapted, to include other indicators of diversity, from GRI 401: Employment (2016) – Disclosure 401-1a New Employee hires and 401-1b Employee Turnover		
		Count	%			
		Male	138		50.18%	
		Female	132		48.00%	
		(Blank)	4		1.45%	
		GenderX	1		0.36%	
		(ii) Race/Ethnicity*			Count	%
		White	142		51.64%	
		Asian	55		20.00%	
		(Blank)	26		9.45%	
		I Do Not Wish to Answer	20		7.27%	
		Black or African American	13		4.73%	
		Hispanic or Latino	13		4.73%	
		Two or More Races	6		2.18%	
		(iii) Age Group			Count	%
		20 and under	1		0.36%	
		21–30	114		41.45%	
		31–40	88		32.00%	
		41–50	55		20.00%	
		51–60	14		5.09%	
61–64	3	1.09%				
(iv) Work Country		Count	%			
United States of America	253	92.00%				
Netherlands	22	8.00%				
2. Total number and rate of employee turnover during the reporting period, by age group, gender, other indicators of diversity and region	(i) Gender					
	Count	%				
	Female	33		58.93%		
	Male	23		41.07%		
	(ii) Race/Ethnicity*			Count	%	
	White	30		53.57%		
	Asian	14		25.00%		
	I Do Not Wish to Answer	3		5.36%		
	Two or More Races	3		5.36%		
	Black or African American	2		3.57%		
	Hispanic or Latino	2		3.57%		
	(Blank)	2		3.57%		
	(iii) Age Group			Count	%	
	21–30	29		51.79%		
	31–40	17		30.36%		
41–50	8	14.29%				
51–60	2	3.57%				
(iv) Work Country		Count	%			
United States of America	56	100%				

* US employees only (2021)

Core Metrics	Disclosures	Response and/or Reference	Related Standards
Economic contribution	1. Direct economic value generated and distributed (“EVG&D”) – on an accrual basis, covering the basic components for the organization’s global operations, ideally split out by: a. Revenue b. Operating costs c. Employee wages and benefits d. Payments to providers of capital e. Payments to government f. Community investment	1. Pages 7 and 102, FY21 Form 10-K	GRI 201: Economic Performance (2016) – Disclosure 201-1 Direct Economic Value Generated and Distributed (“EVG&D”) and 201-4 Financial assistance received from government
	2. Financial assistance received from the government—Total monetary value of financial assistance received by the organization from any government during the reporting period	Not Applicable. Ginkgo did not receive financial assistance from the government in FY21.	
Financial investment contribution disclosure	1. Total capital expenditures (“CapEx”)—Depreciation supported by narrative to describe the company’s investment strategy	1. Pages 106, 107, and F-4, FY21 Form 10-K	Accounting Standard (“IAS”) 7 – Statement of Cash Flows and US GAAP Accounting Standards Codification (“ASC”) 230 Statement of Cash Flows
	2. Share buybacks + Dividend payments supported by narrative to describe the company’s strategy for returns of capital to shareholders	2. The Company does not currently return capital to shareholders through a dividend payment program. Page F-3, FY21 Form 10-K	
Innovation in Better Products and Services			
Total R&D expenses (\$)	Total costs related to research and development	Page 100 and 102, FY21 Form 10-K	US GAAP definition ASC 730
Community and Social Vitality			
Community investment is included within the economic contribution metric (part of EVG&D)			
Total tax paid	The total global tax borne by the company, including corporate income taxes, property taxes, non-creditable VAT and other sales taxes, employer-paid payroll taxes and other taxes that constitute costs to the company, by category of taxes	Page 100 and 102, FY21 Form 10-K	Adapted from GRI 201-1 (2016) – Direct Economic Value Generated and Distributed

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Biology affects
all of us