GINKGO BIOWORKS

Grow with Ginkgo

J.P. Morgan Healthcare Conference

Jason Kelly
January 12th, 2022

Disclaimer

Forward-Looking Statements

This presentation (the "presentation") may contain certain forward-looking statements within the meaning of the federal securities laws, including statements regarding our current expectations and anticipated results of operations, all of which are subject to known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements, market trends, or industry results to differ materially from those expressed or implied by such forward-looking statements These forward-looking statements generally are identified by the words "believe," "project," "potential," "expect," "anticipate," "estimate," "intend," "strategy," "future," "opportunity," "plan," "may," "should," "will," "would," "will be," "will continue," "will likely result," and similar expressions Forward-looking statements are predictions, projections and other statements about future events that are based on current expectations and assumptions and, as a result, are subject to risks and uncertainties Many factors could cause actual future events to differ materially from the forward-looking statements in this document, including but not limited to: (i) the effect of the business combination between Ginkgo Bioworks Holdings, Inc ("Ginkgo") and Soaring Eagle Acquisition Corp ("Soaring Eagle") on Ginkgo's business relationships, performance, and business generally, (ii) risks that the business combination disrupts current plans of Ginkgo and potential difficulties in Ginkgo's employee retention, (iii) the outcome of any legal proceedings that may be instituted against Ginkgo related to its business combination with Soaring Eagle, (iv) volatility in the price of Ginkgo's securities now that it is a public company due to a variety of factors, including changes in the competitive and highly regulated industries in which Ginkgo plans to operate, variations in performance across competitors, changes in laws and regulations affecting Ginkgo's business, changes in the combined capital structure and expectations associated with increases in the number of shares available for sale, (v) the ability to implement business plans, forecasts, and other expectations after the completion of the business combination, and identify and realize additional opportunities, and (vi) the risk of downturns in demand for products using synthetic biology The foregoing list of factors is not exhaustive You should carefully consider the foregoing factors and the other 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 November 15, 2021, 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 Any forward looking statement made by us in this presentation, the conference call during which this presentation is reviewed and any discussions that follow speaks only as of the date on which it is made You 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

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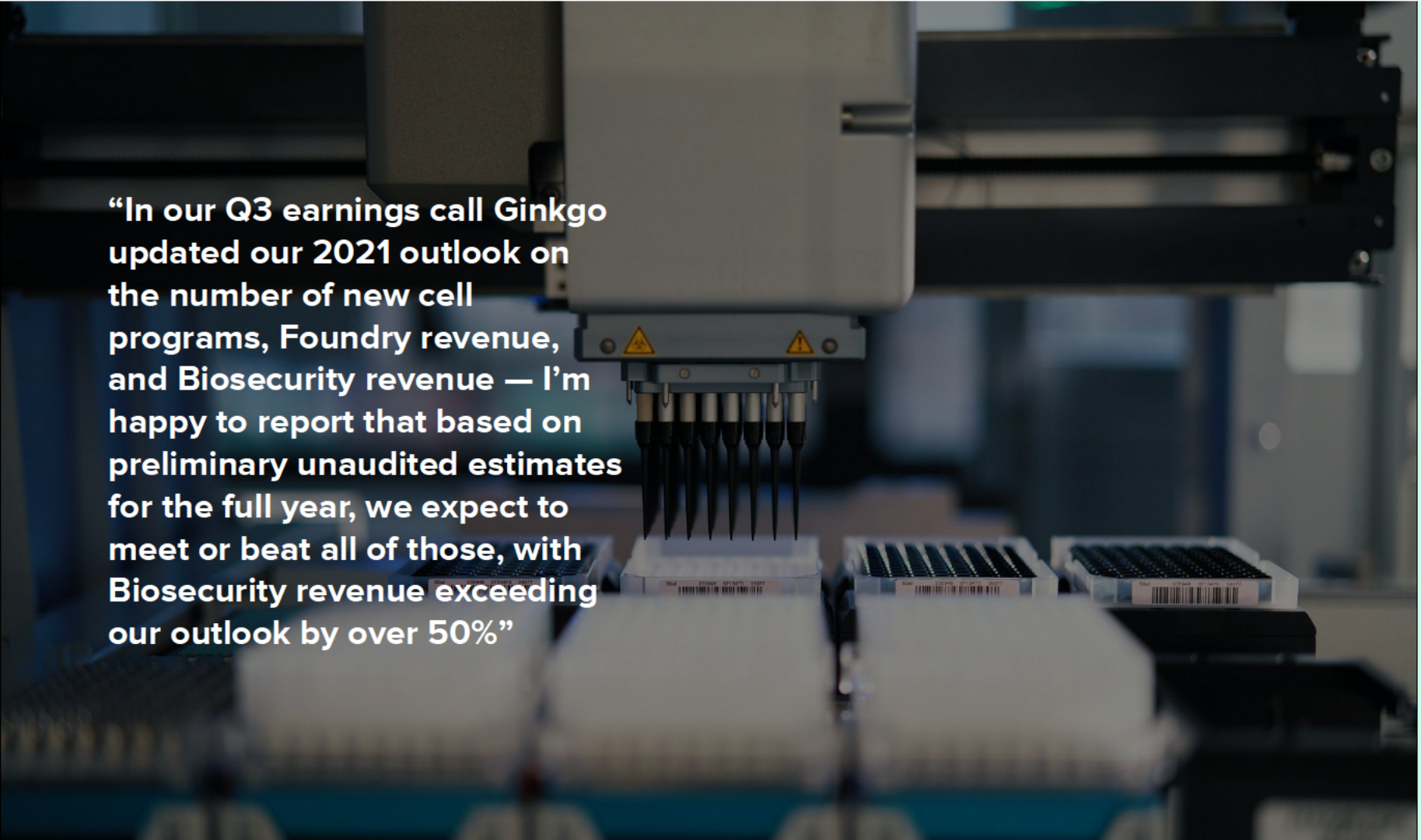
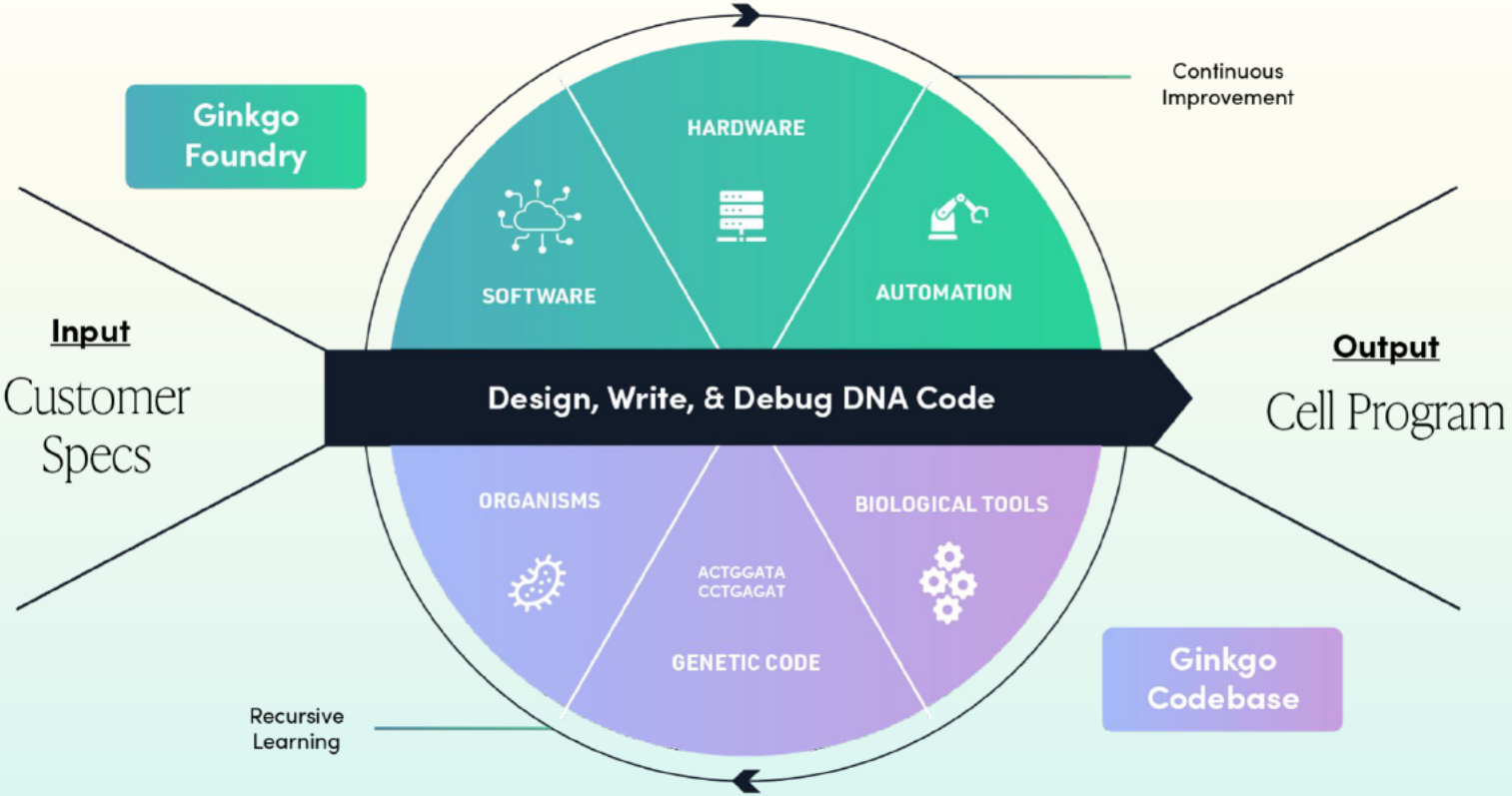
DNA
LISTED
NYSE



“In our Q3 earnings call Ginkgo updated our 2021 outlook on the number of new cell programs, Foundry revenue, and Biosecurity revenue — I’m happy to report that based on preliminary unaudited estimates for the full year, we expect to meet or beat all of those, with Biosecurity revenue exceeding our outlook by over 50%”

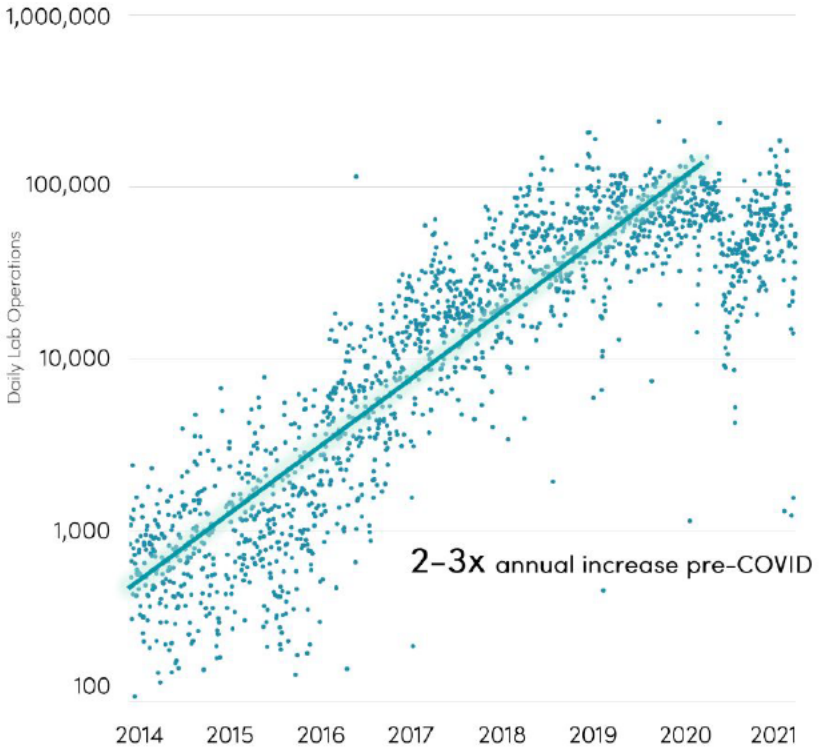
We program cells for our customers so that they can develop new products



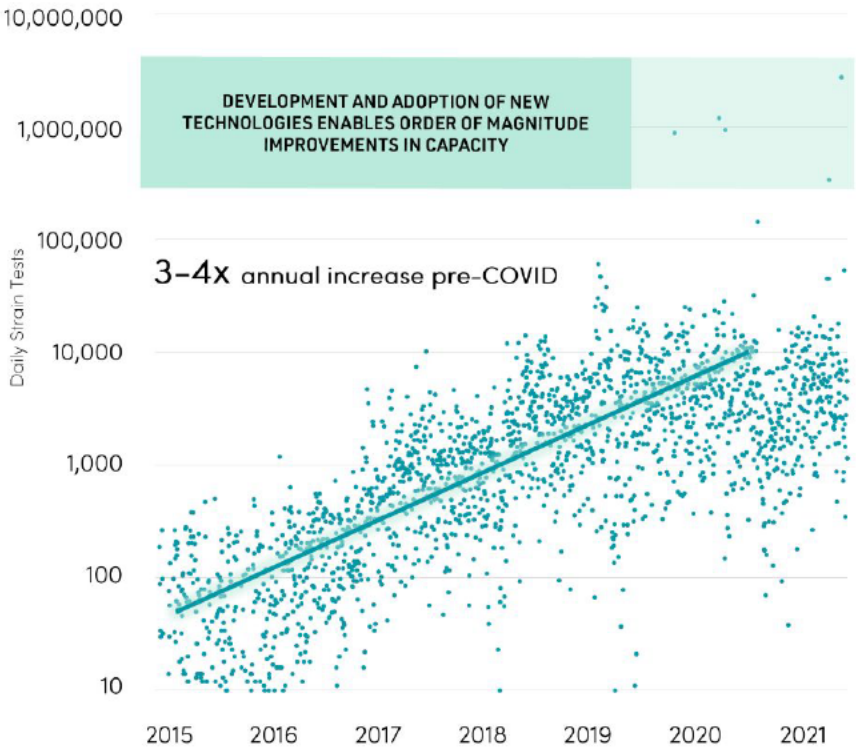

THE MORSE GROUP

Ginkgo's Foundry has been scaling roughly 3X a year

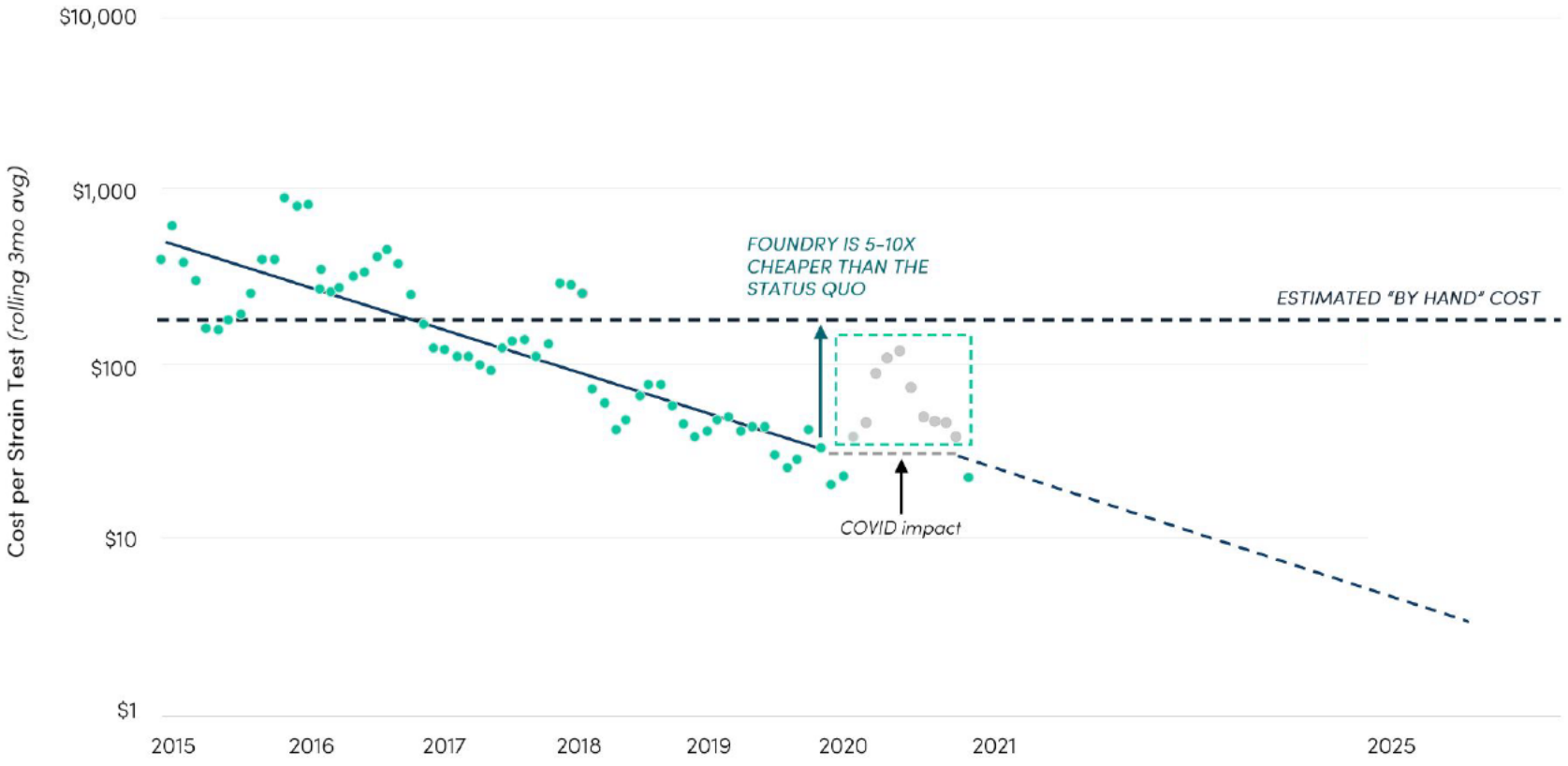
LAB OPERATIONS: MEASURING WORK DONE ON THE PLATFORM



STRAIN TESTS: MEASURING THE OUTPUT OF THE PLATFORM

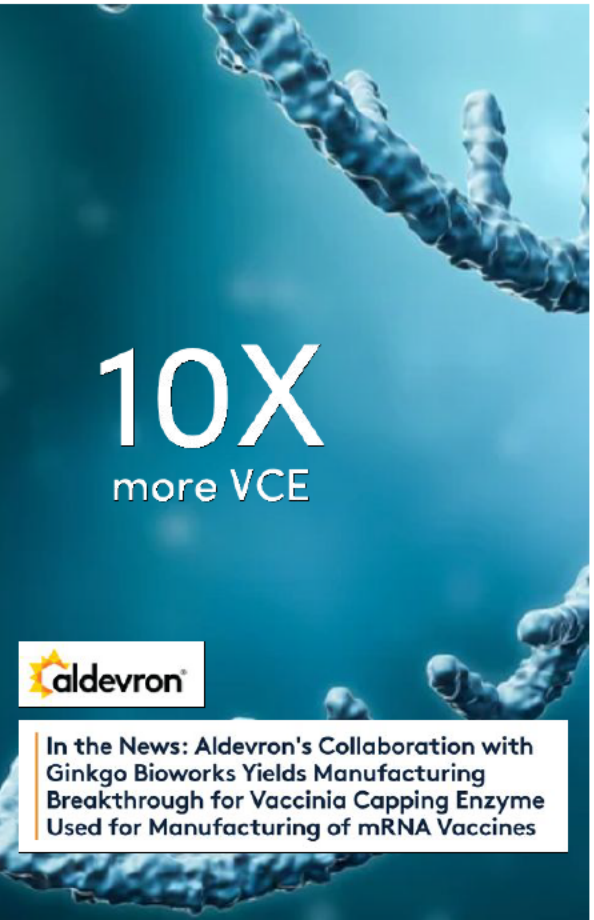


Unit costs to program cells have decreased by 50% per year



Note: Costs include all operational and R&D-related activities (i.e. both current programs and investments in future capacity)

A wide range of products on a common platform



Ginkgo more than doubled the number of products in scale production by our customers in 2021

Product	Peach	Coconut	[Confidential]	VCE	Myoglobin	CBG	[Confidential]	CBGV
Ginkgo organism?	✓		✓	✓	✓	✓		✓
Ginkgo process?	✓	✓	✓	✓	✓	✓	✓	✓
Approx Year Started	2014	2016	2016	2020	2018	2018	2020	2018
Year Completed	2019	2019	2018 *(mfg began in 2020)*	2021	2021	2021	2021	2021
Customer	ROBERTET	ROBERTET	[Confidential]	caldevron	motif FOODWORKS	CRONOS GROUP	[Confidential]	CRONOS GROUP
Primary End Market	Consumer	Consumer	Chemicals	Pharma	Food	Consumer	Pharma	Consumer
Organism	*Fungal (Species 1)*	*Fungal (Species 2)*	*Bacterial (Species 3)*	*Bacterial (Species 4)*	*Fungal (Species 5)*	*Fungal (Species 6)*	*Bacterial (Species 4)*	*Fungal (Species 6)*
Product Type	Small Molecule	Small Molecule	Small Molecule	Protein	Protein	Small Molecule	Nucleic Acid	Small Molecule
Mfg Scale (L)	Most being produced in tanks at the 25,000 - 50,000L scale; some pharma products produced at lower scale (hundreds to 1,000L)							*Pilot Scale*
Downstream Economics	Royalty/Toll	Royalty/Toll	Royalty/Toll	Royalty	Equity	Milestone	Milestone	Milestone

Note: "Ginkgo organism" refers to a strain engineered by Ginkgo, whereas "Ginkgo process" refers to a manufacturing process developed by Ginkgo

Ginkgo Ferment: Our developer conference

WATCH ↗

We partner to address challenges from Discovery through Manufacturing

Over 100 cumulative programs with partners across industries

THERAPEUTICS & VACCINES

Antibody Discovery

High-throughput screening of COVID-19 antibodies from patient RNA-Seq data

TOTIENT

Antibiotics Discovery

Genome mining for identification of novel classes of antibiotics

Roche

Enzyme Discovery

Enzyme discovery and engineering for reducing immunogenicity for therapeutics

Selecta Biosciences

Living Therapeutics

Engineering metabolic pathways in microbes towards therapeutic candidates for metabolic disorders

synlogic

Gene Therapy Platform

Optimize recombinant adeno-associated virus (AAV)-based vectors

Biogen

Selecta Biosciences

Biologics & Reagent Production

Rapid, multiplexed design of experiments for reagent and process development & optimization

aldevron

saponiQx

Optimvia

NON-THERAPEUTICS

Bio-agriculture

Engineering crop-colonizing microbes for sustainable agriculture

JOYN BIO

BAYER

Animal Protein

Discovery and design of new approaches to developing plant-based foods and food ingredients

motif FOODWORKS

Plant Extracts

Engineering cells to produce cultured plant ingredients for flavor, fragrance and cannabinoid industries

ROBERTET

CRONOS GROUP

Givaudan

Antheia

Oligosaccharides

Optimization and scaling of the production of human milk oligosaccharides for a suite of products

Glycosyn

Chemicals

Develop more sustainable bio-based chemicals for multiple industries

Sumitomo

Industrial Enzymes

Create a fast and more effective way to create enzymes for the food industry

KERRY

Cargill

Customers run their programs on Ginkgo's platform to drive business value

Ginkgo partnered with Motif to develop **more delicious and sustainable food.**

303
PROTEINS SOURCED

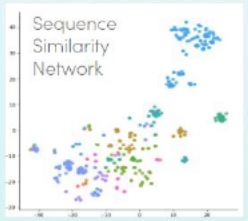
300%
IMPROVEMENT OVER UNMODIFIED STRAINS

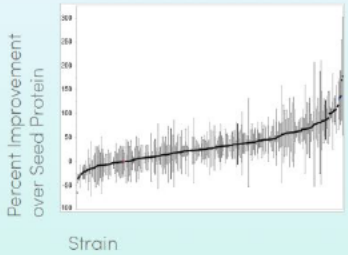
In just 1 year, 6 prototype strains were developed, and product samples were produced for benchmarking and early application testing. Improved variants were designed, built and validated over the next 9 months.

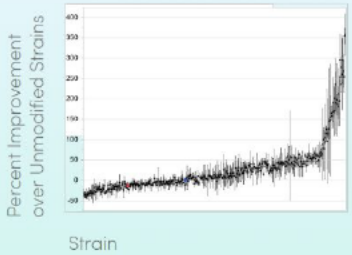
The strain's performance exceeded Motif's specifications by >70%.

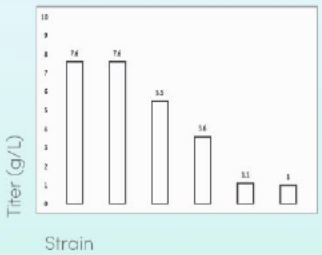
motif FOODWORKS

Q1	Q2	Q3	Q4	1 YEAR LATER
IDENTIFY POTENTIAL PROTEINS	SCREEN FOR BEST CANDIDATE PROTEIN	STRAIN ENGINEERING & PATHWAY BALANCING	ITERATIVE STRAIN CONSTRUCTION & TESTING	PROTOTYPE STRAINS READY



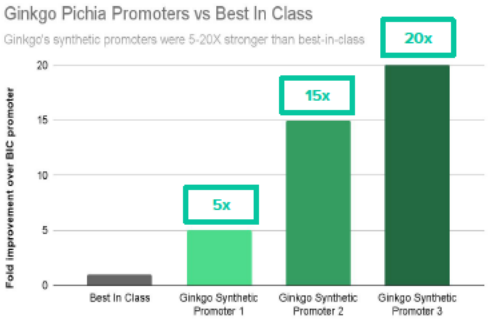


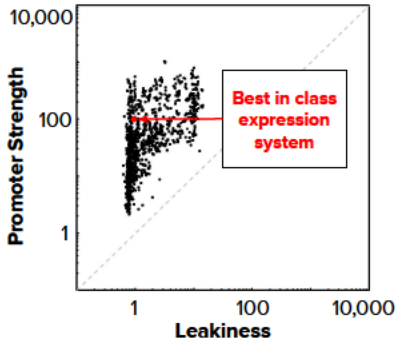




We believe our methanol-free *Pichia pastoris* protein engineering system is significantly better than best-in-class comparables

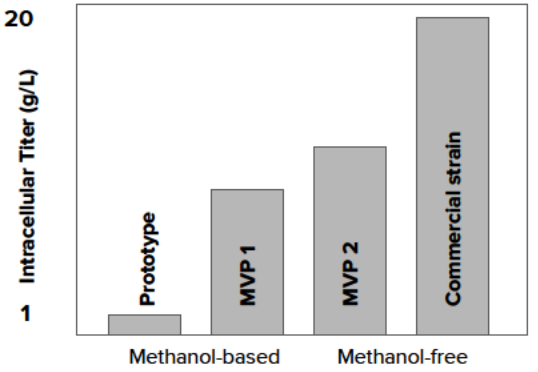
100,000+ synthetic expression systems with tunable strength and regulatory characteristics, best of which are **20x stronger than AOX1 with Methanol**

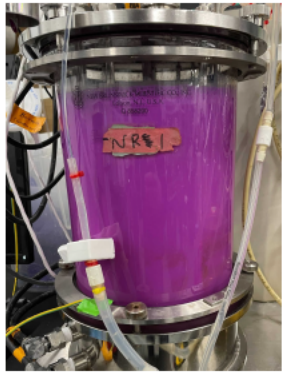




>20g/L intracellular protein production

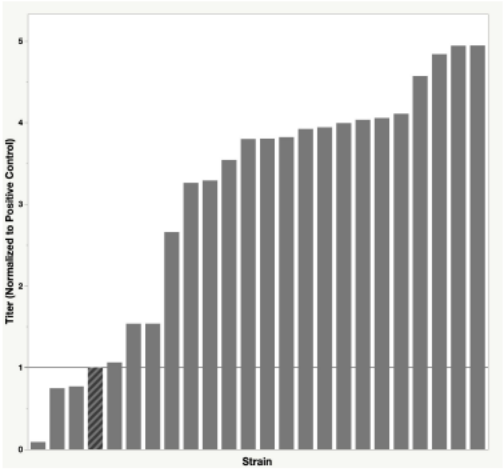
High-performance methanol and **methanol-free** options

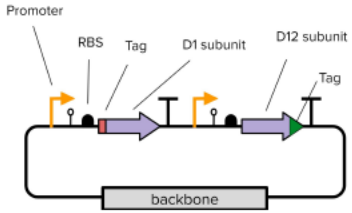




Fully validated high-performance fermentation processes, scalable from AMBR 250 to 10,000L+

(fluorescent protein)





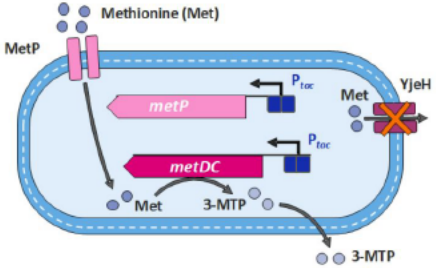
Ginkgo screened 100s of expression constructs for VCE and employed a tagging strategy to inform **screening, solubility, stability, and purification.** The library varied promoters, ribozymes, RBS', recodes, and backbones, while the VCE sequence was retained. Process improvements by Ginkgo leveraging small-scale lab fermentation yielded further improvements and were followed by a successful tech transfer to the partner. **Project took 14 months from start in Ginkgo's foundry to announcement of successful scale-up by the customer.**

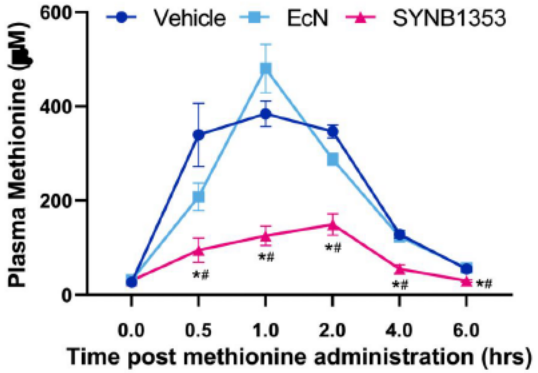
Tom Foti, President of the Protein Business Unit at Aldevron

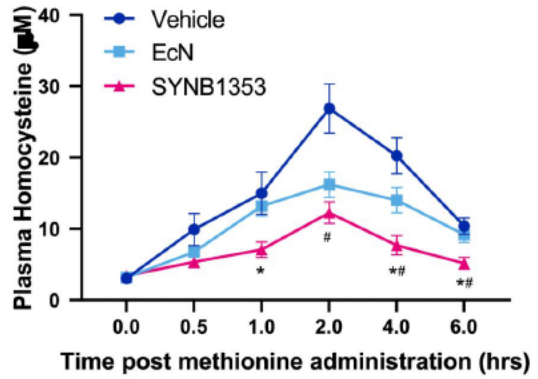
"Since announcing our manufacturing breakthrough on VCE, we're excited to share that we have produced and released product conforming to ISO13485 quality standards, and expect to release VCE under cGMP manufacturing in 2022. We are servicing a dozen or more clients with increased manufacturing scales coming on-line in 2022 and beyond."

Synlogic and Ginkgo partnered to develop SYNB1353, a non-colonizing bacterial strain, as a living treatment for the rare genetic disease homocystinuria (HCU) - IND planned for 2022

- HCU is a disorder characterized by the accumulation of homocysteine, an amino acid derived from methionine, in the blood and urine. Degrading methionine in the GI tract prevents methionine absorption and conversion to homocysteine in plasma.
- Ginkgo used its proprietary codebase and leveraged its metagenomic databases sourced from bacteria, fungi, animals, plants, and protein engineering expertise to rationally design, build, and test **1000s of constructs**, informed by nature, to improve the performance of two critical proteins in the Methionine pathway (MetDC and MetP).
- Synlogic has announced that it expects to file an investigational new drug (IND) application with the FDA for SYNB1353 and begin clinical development in 2022 - this marks a first for Ginkgo-engineered materials.

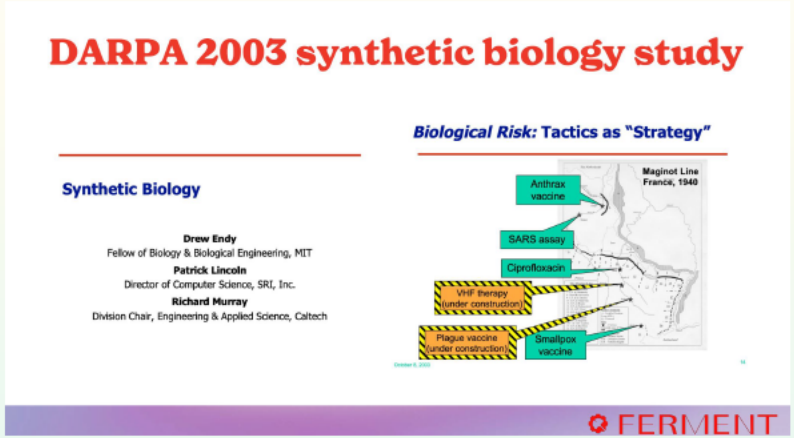






Perreault, Mylène. (2021, Nov). Development of an Investigational Methionine-consuming Synthetic Biotic Medicine (SYNB1353) for the Treatment of Homocystinuria. Paper presented at the 14th International Congress of Inborn Errors of Metabolism, Sydney, Australia.

Like cybersecurity is necessary for computer infrastructure, biosecurity is necessary for bioengineering

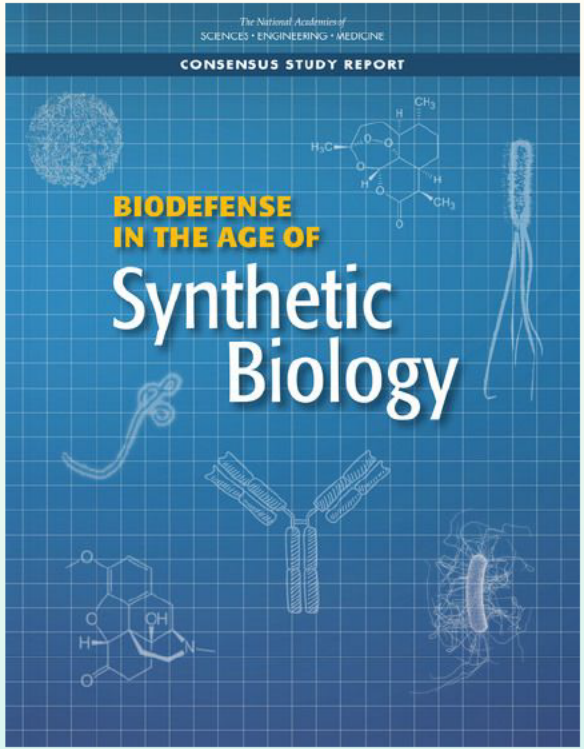


June 27, 2018, 2:00 AM PDT

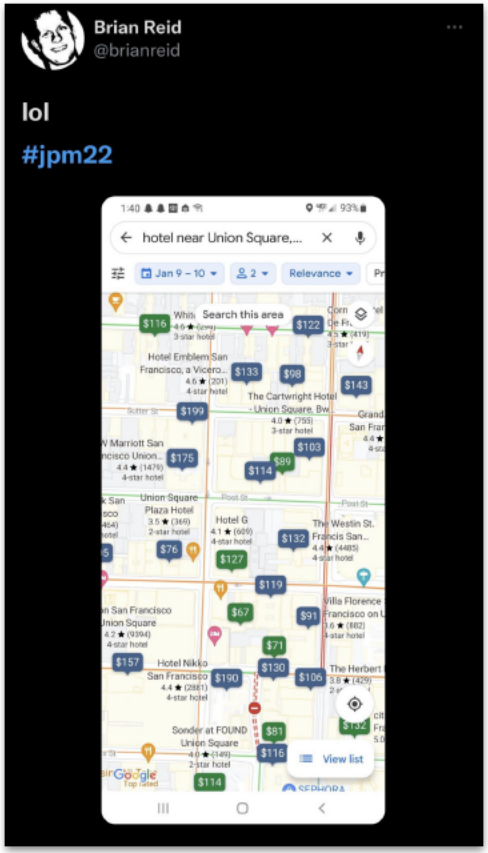
Bloomberg

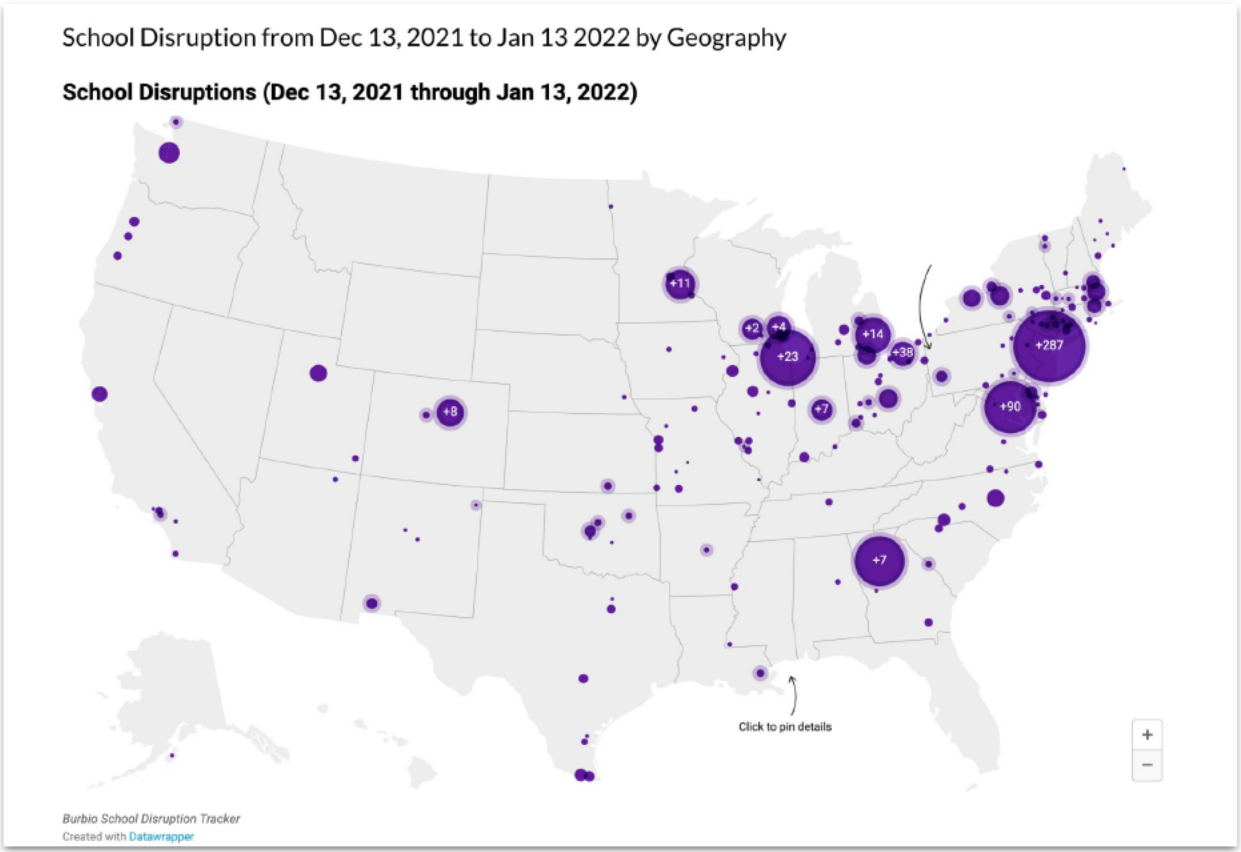
The DNA Cops Who Make Sure the World's Deadliest Viruses Aren't Rebuilt

Ginkgo Bioworks is helping stop a new class of lethal biological weapons from being created.



Biosecurity is about preventing this from happening





Biosecurity tools empower public health leadership

Today, we are working alongside & complement public health to aid government, businesses and individuals in making better decisions to manage risk.

PUBLIC HEALTH

- 10 contracts with State DPHs for K12
- Work with Eurofins on HHS' "Operation Expanded Testing" in Northeast and South
- Contract with CDC for Air Travel Biosurveillance

BUSINESSES

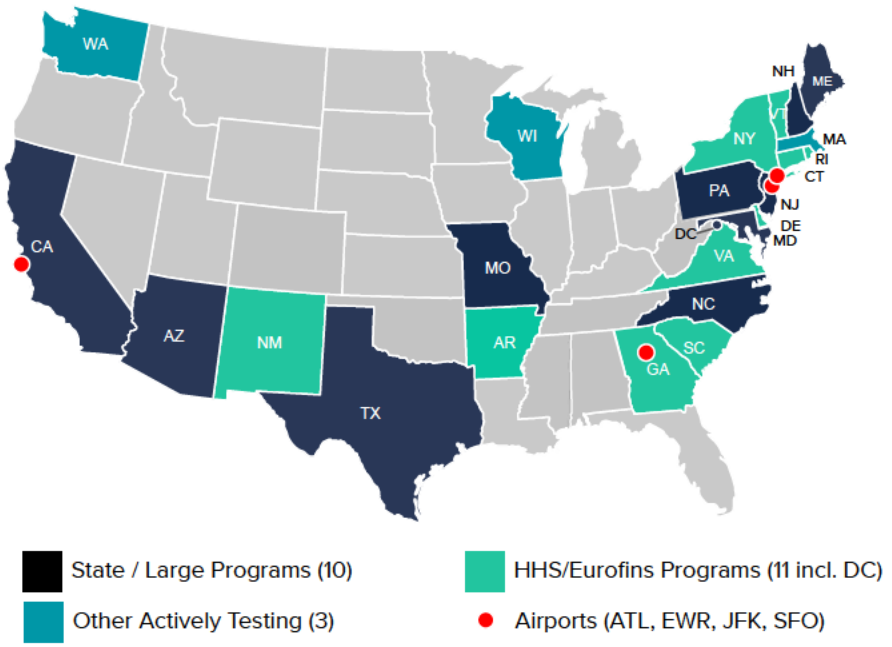
- 3,000+ schools and other locations testing
- 4 major airports in collaboration with CDC and XpresCheck

INDIVIDUALS

- 280,000 individuals testing per week
- 3M+ samples collected in H2 2021

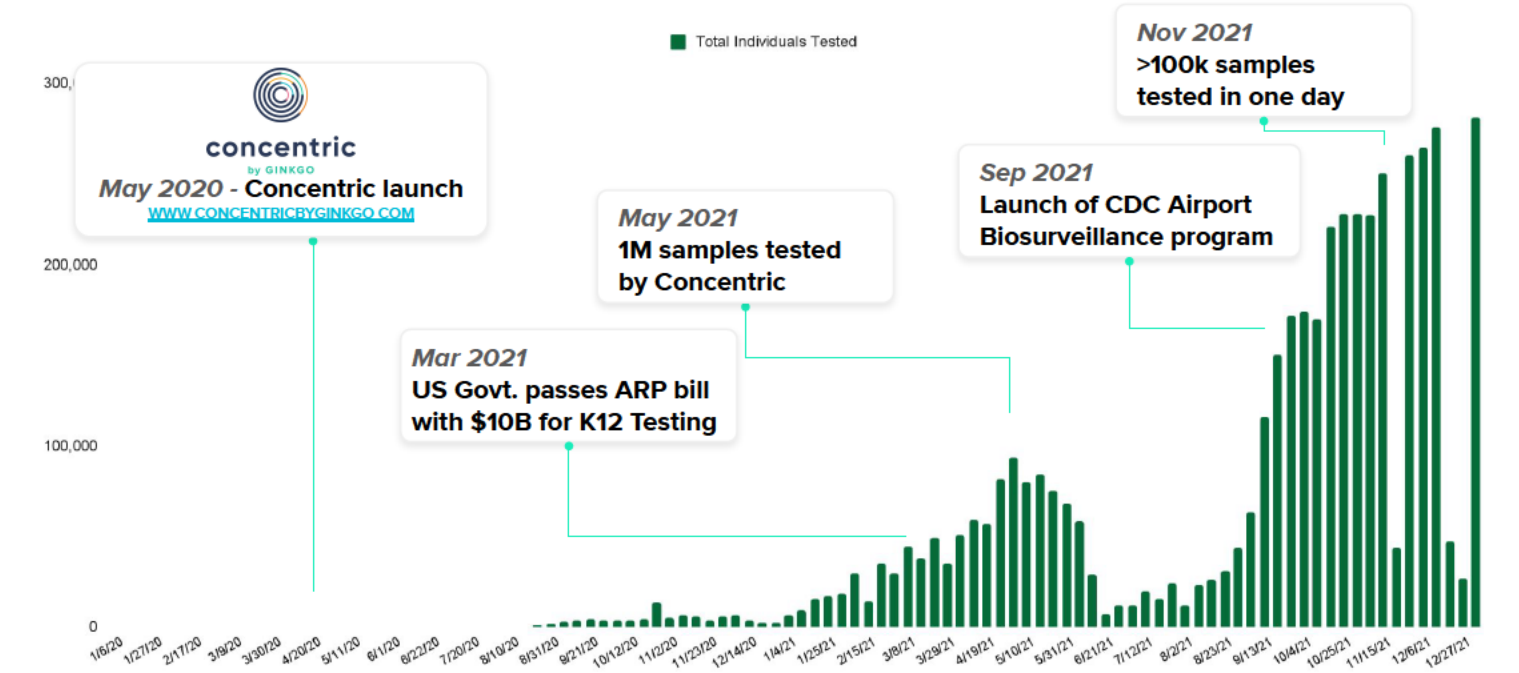
1) Unless otherwise indicated, data as of week of 1/3/2022

Concentric Testing Program Footprint



Biosecurity tools need to scale on the ground

Number of samples tested for COVID-19 per week by Concentric, Jan 2021 - Jan 2022, all modalities



Learnings inform new biosecurity product development

Meet people where they are

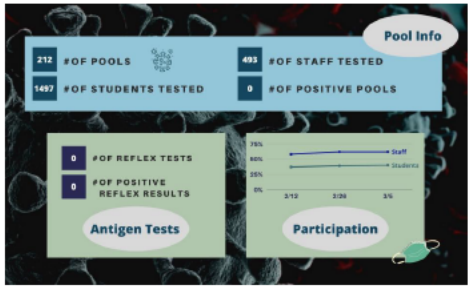
Schools and airports as test sites allow for testing to happen within life's movements.

Make it easy

- ☑ Free **local** onsite support
- ☑ Pick-up by a **local** courier
- ☑ Results processed by a **local** lab

Collection is done in the classroom and supported by an operationalized network.

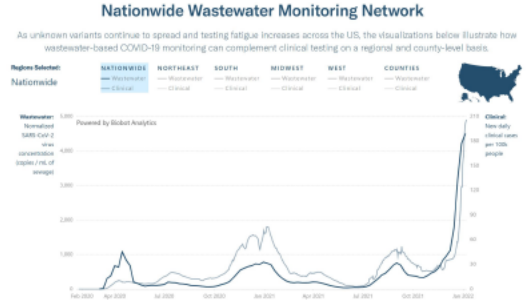
Empower all participants



Every week schools, families, and travelers make decisions off of the data.

Ongoing monitoring informing rapid vaccine and therapeutic development can form the backbone of global biosecurity

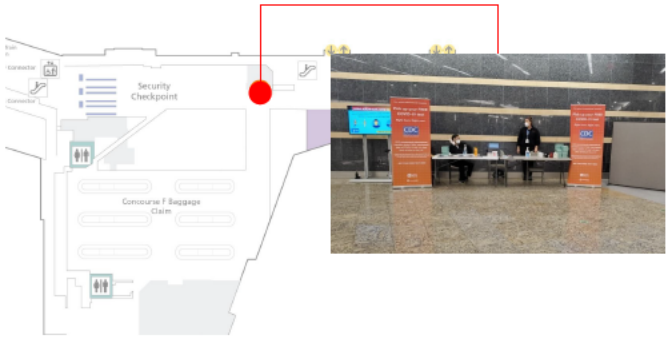
Biobot Analytics



Concentric by Ginkgo and XpresCheck™ Confirm **First North American Detections of Novel BA.3 Sublineage of Omicron Variant** through CDC COVID-19 Air Travel Biosecurity Program

December 18, 2021

Example of setup at **Hartsfield-Jackson Atlanta International Airport,** International Terminal, Baggage Claim



eurofins

Quest Diagnostics


Let’s build the world
we want to see
jason@ginkgobioworks.com