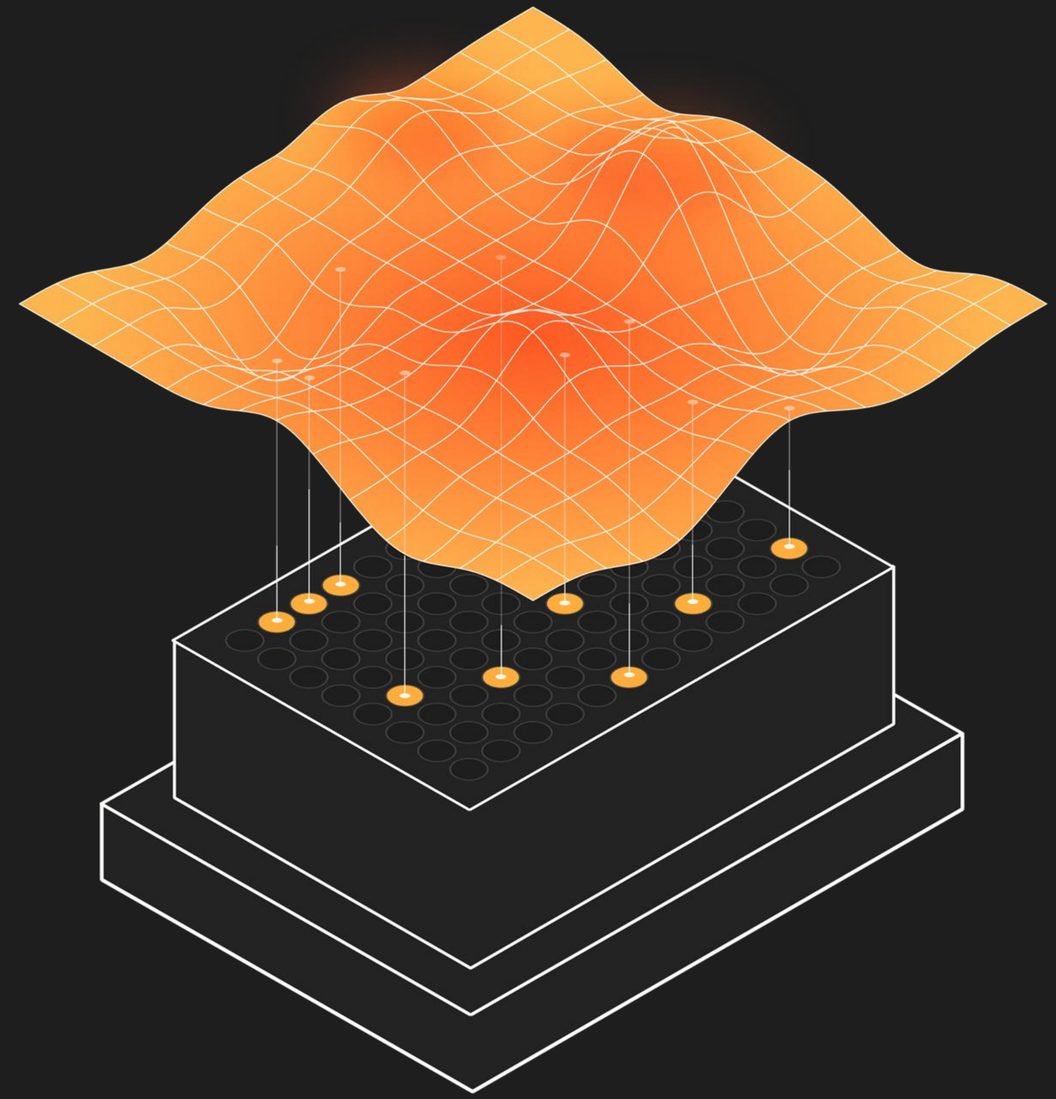
Differential Bio

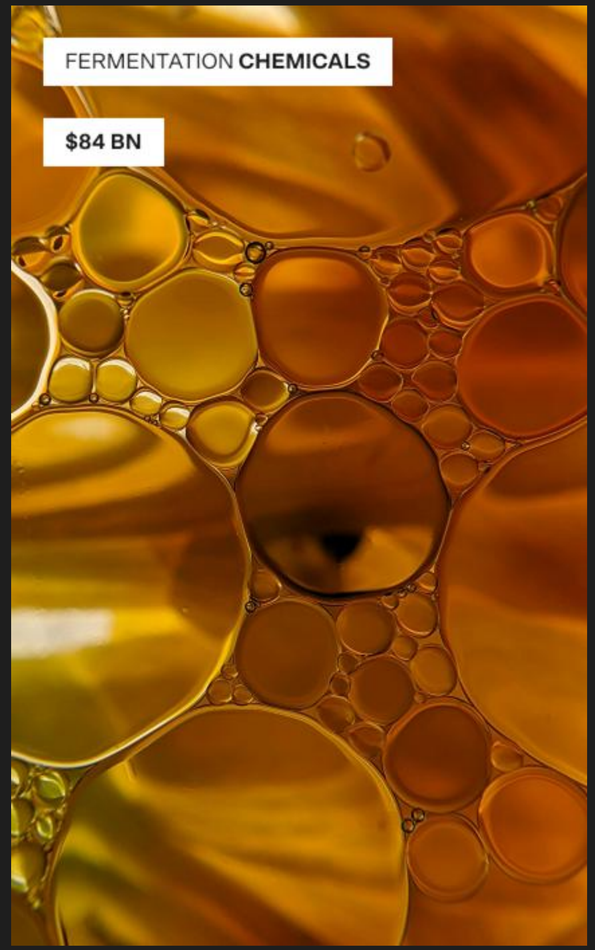
The Intelligence Engine for Industrial Biology

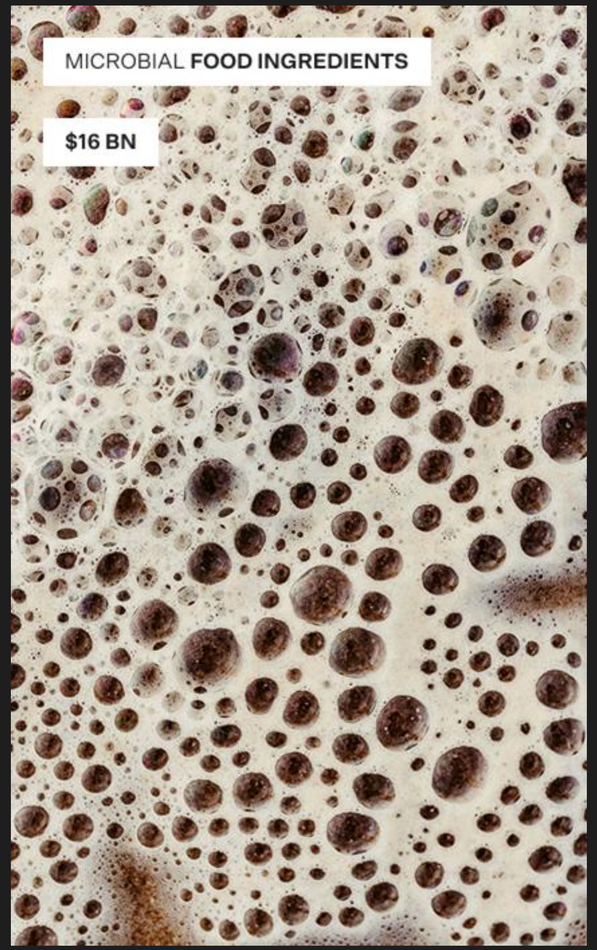
Unlocking the manufacturing power of microbes
via Robotics and AI

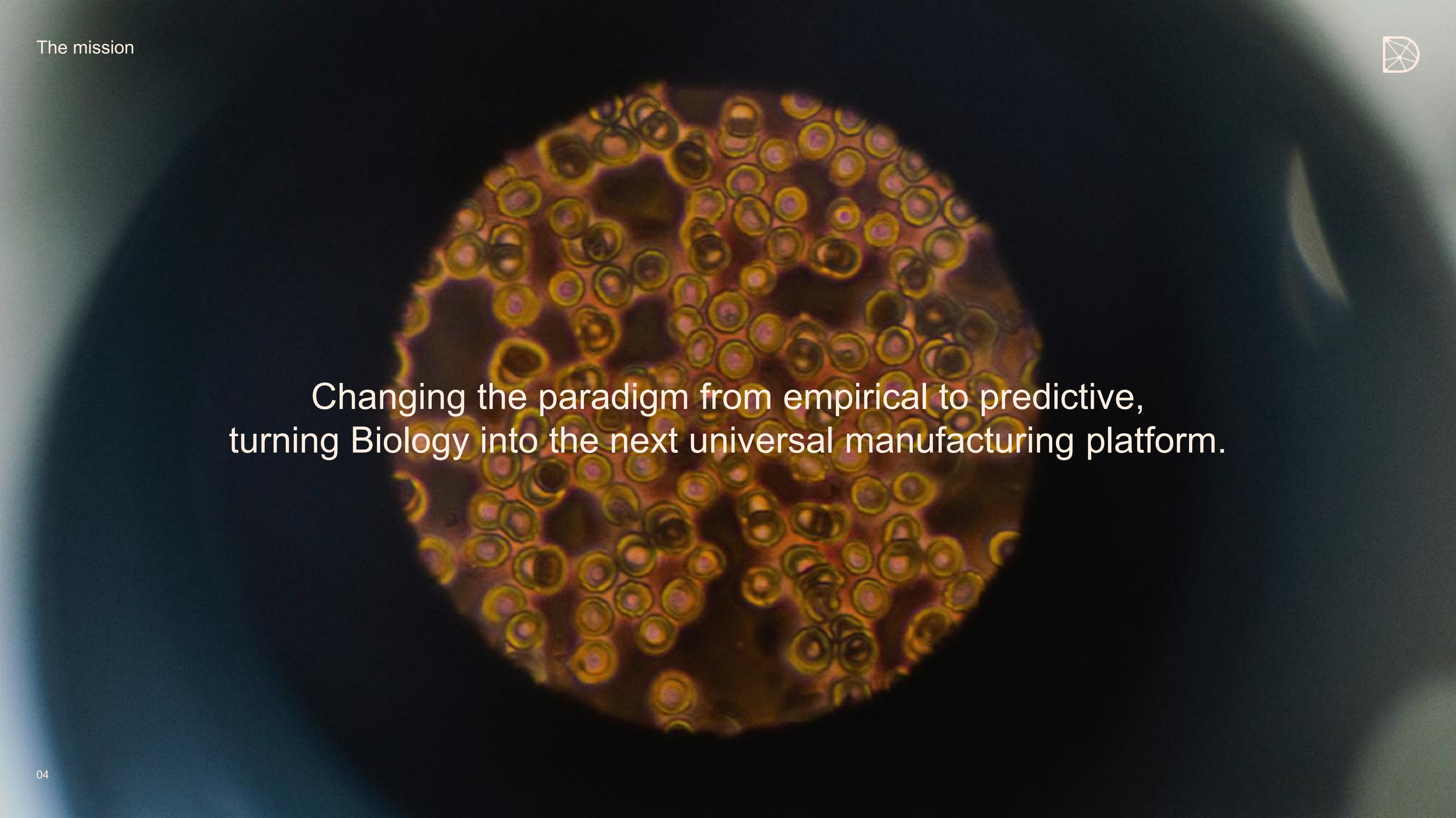


BRIDGE2FOOD JUNE 2026

From bioactive peptides to Mars microbes, Biology’s manufacturing power is near-endless

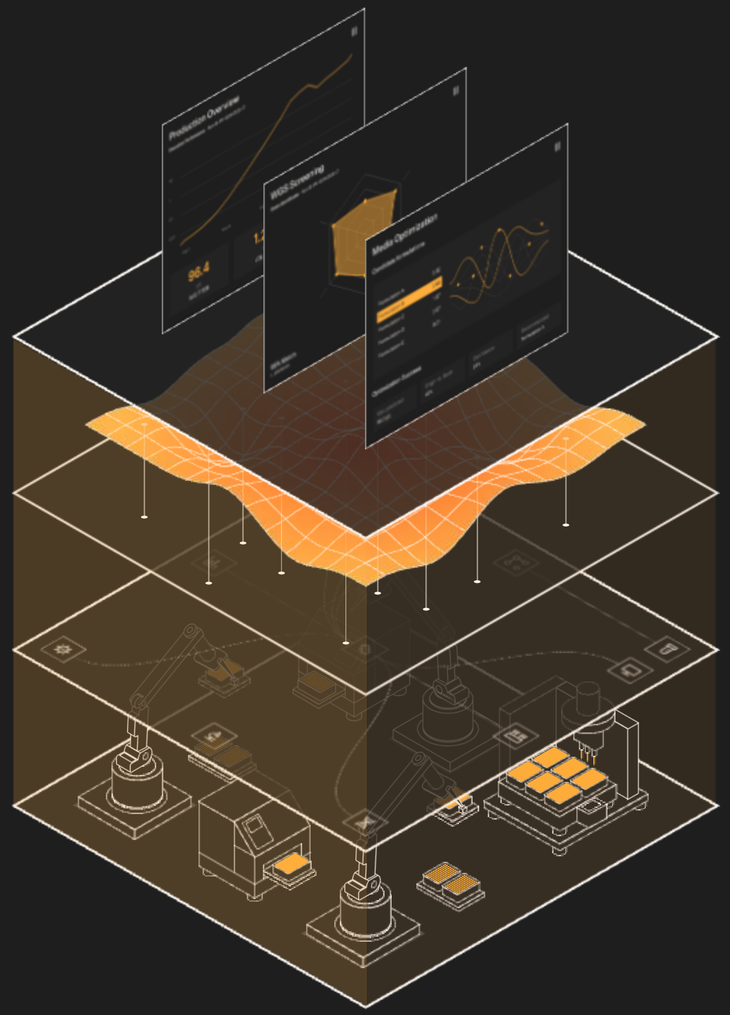






Changing the paradigm from empirical to predictive,
turning Biology into the next universal manufacturing platform.

Differential Bio’s BioAI Data Factories turn fermentation into a learning system



Application Layer

Customer-facing software for strain, media, process, and scale-up decisions. Interface to pre-trained models, embedded in customer workflows.

Model Layer

AI models predicting measured endpoints such as biomass growth, product formation, viability, and other process outcomes.

Data Layer

Data processing and storage layer. Leveraging a proprietary ontology to unify data generated by Differential, prepared for training predictive AI models.

Physical Layer

Automation-first wet lab generating standardized, AI-ready microbial production data (e.g. biomass growth, product formation, viability).

Turning AI-ready data gen into tangible customer value paying back in 3 months

We optimized an already scaled-up, commercially active microbial product, using The Biological Data Factory for a probiotic pet food ingredient manufacturer.

4 weeks

End-to-end outcome delivery, as opposed to 3-6 months.

34x

More experiments than status quo, enabled by robotic lab automation.

283%

ROI in first year of optimization investment, enabled by AI-driven bioprocess optimization. **Read the full case study here**.

What this case study proves

This probiotics case study proves our platform can deliver measurable P&L impact in a large, mature, non-VC-dependent fermentation market, where medium optimization directly drives microbial growth, survival, and function today while building the data and models needed to innovate tomorrow.

Experienced bio builder team across microbiology, robotics, and AI

Founders

Christian Spier
CEO & Co-Founder

Computational Biologist who scaled ventures across healthcare (Dialogue, IPO), software (Y42, US GM), and biotech.
15+ PortCos

Martin Patz
CTO & Co-Founder

Engineer who modeled complex physical systems across robotics (Kuka), spatial computing (NavVis), and AI chips (Tensordyne)

Bio Data Factory Layer Heads

Jacob Cohen
Founding Lab Scientist

PhD in Microbiology, ex-Ginkgo Bioworks (IPO), expert in high-throughput screening

Physical Layer

Charlotte Merzbacher
Founding Data Scientist

PhD in AI for strain optimisation; ex-DS at Natera (IPO, Sequoia), 15+ publications

Modeling Layer

Kevin Schindler
Founding PM

ex-Head of ML at insilico Biotechnology (exited to Yokogawa), ex-founder

Application Layer

Core Team

Isaac Guerreiro
Full-stack SWE

7+ years coding with biotech experience

Joshua Rees-Garbutt
Customer Data Scientist

Mol. Bio. PhD/PostDoc ex-founder (SynBio)

Luis Kramer
Wet Lab Scientist

Microbiologist, ex-founder (AgTech)

Konstantin Amm
Founder's Associate

Business generalist, biotech experience

Student Support Team

Kate Przydzial
Junior Wet Lab Scientist

Kristiana Ellen
Junior Wet Lab Scientist

Nihan Kardan
Junior Wet Lab Scientist

Jannus Goecke
Junior Wet Lab Scientist

Yongsoo Mike Cho
Junior Full-stack SWE

Huiyuan Liu
Junior Robotic Automation Engineer

Experience from organizations like

TUM · TENSORDYNE · GINKGO BIOWORKS · natera · Dialogue · Y42 · YOKOGAWA

MIT · CARLYLE · HARVARD UNIVERSITY · Berkeley UNIVERSITY OF CALIFORNIA · University of BRISTOL · Stanford University · CDTM CENTER FOR DIGITAL TECHNOLOGY AND MANAGEMENT · THE UNIVERSITY of EDINBURGH

Reach out, if you would like to assess the potential of Robotics & AI for Biosolutions

Pilot projects with microbial product developers / ingredient manufacturers across **Probiotics, F&B Ingredients, Enzymes**

Partnerships with fermentation ingredient suppliers **(distributors, formulators, raw material suppliers)**

…

Anyone interested in making microbial products more profitable

It is a unique moment in history to accelerate the next industrial revolution, making industrial biology predictable, scalable, and ultimately, ubiquitous.

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15 team members ~ 2 labs in Munich, Germany ~ Global client portfolio across 6 countries in Food, Ag, and Chemicals