



Smart Experiment Design

Microbial
Fermentation

Cell
Culture

Cancer
Research

About Us



- Spin-off from the University Freiburg
- Founded in 2021
- Specialized expertise and experience with biological organisms
- Proprietary data processing pipeline
- R&D backed by funding from German federal ministries



The problem we solve



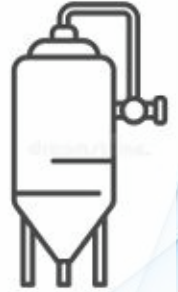
Strain selection



Process development



Scale up



Production

The problem we solve



Strain selection



Process development



Scale up



Production

A gigantic search space



Often, there are more conditions
to test than there are stars in our
galaxy

Classical DoE fails!

It's like navigating with a paper map instead of GPS

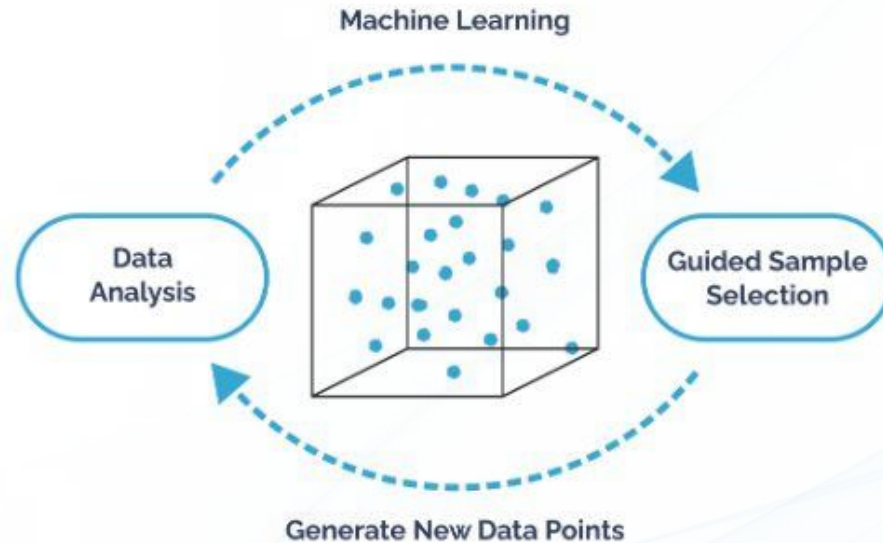


Classical DoE:

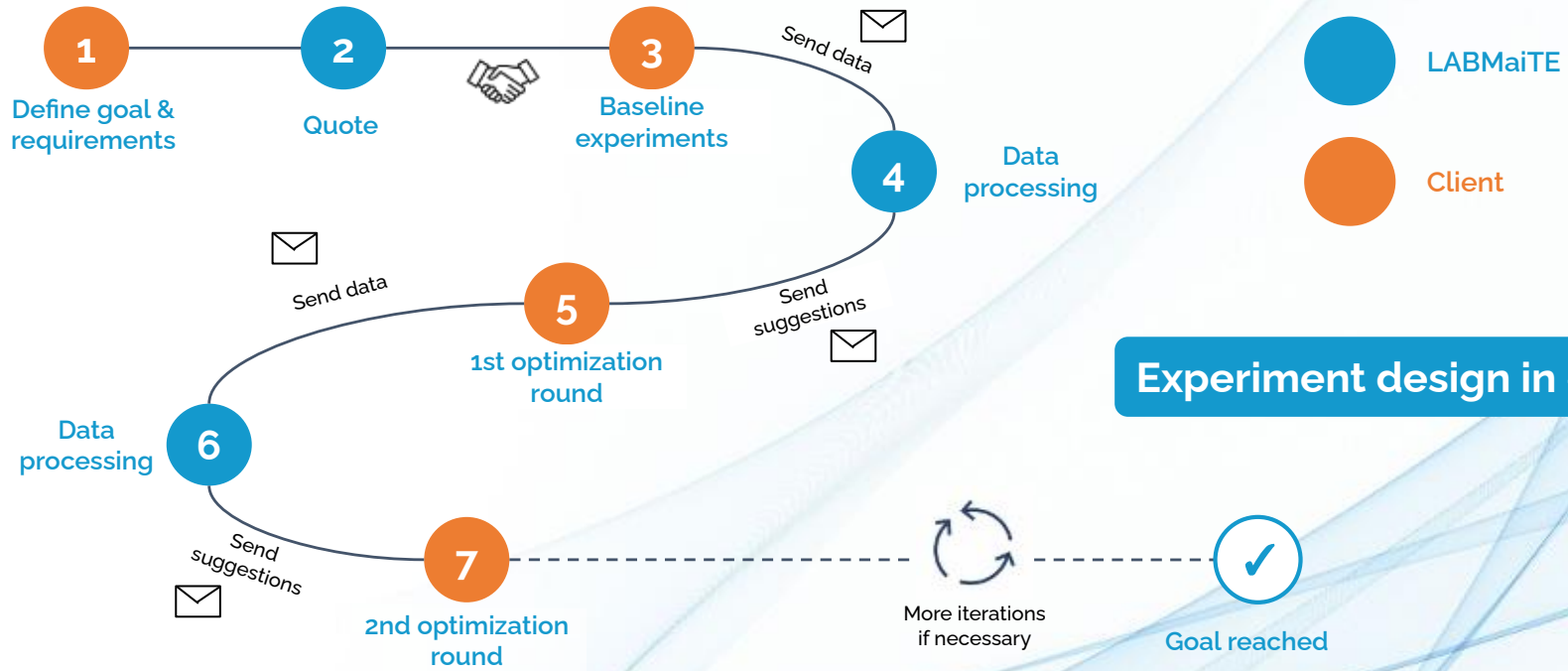
- X** inefficient batch suggestions
- X** cannot model complex correlations
- X** ignores relevant parameters



AI-driven data processing for bioprocess development



Data Processing as a Service



The Value We Create



Increased product yield



More profit

The Value We Create



fewer experiments &
iterations



Reduced cost & dev. time



Fields of application

Media development & optimization

- ✓ White biotechnology
- ✓ Biopharma



Hydrolysis

- Optimization of hydrolysate compositions

R&D started

Organoids

- Tailored cultivation protocol development

Feasibility under evaluation

Downstream processing

- Refolding of proteins

R&D project in preparation

Drug development

- Testing of drug combinations

R&D ongoing

Personalized and precision medicine

- Optimizing therapy strategies
- Development of ATMPs

R&D ongoing

Optimization Roadmap

Complexity

Transfer learning

Informed scale up

Feed strategy

Multi objective

Development time

Cost & output

Product (titer, EA)

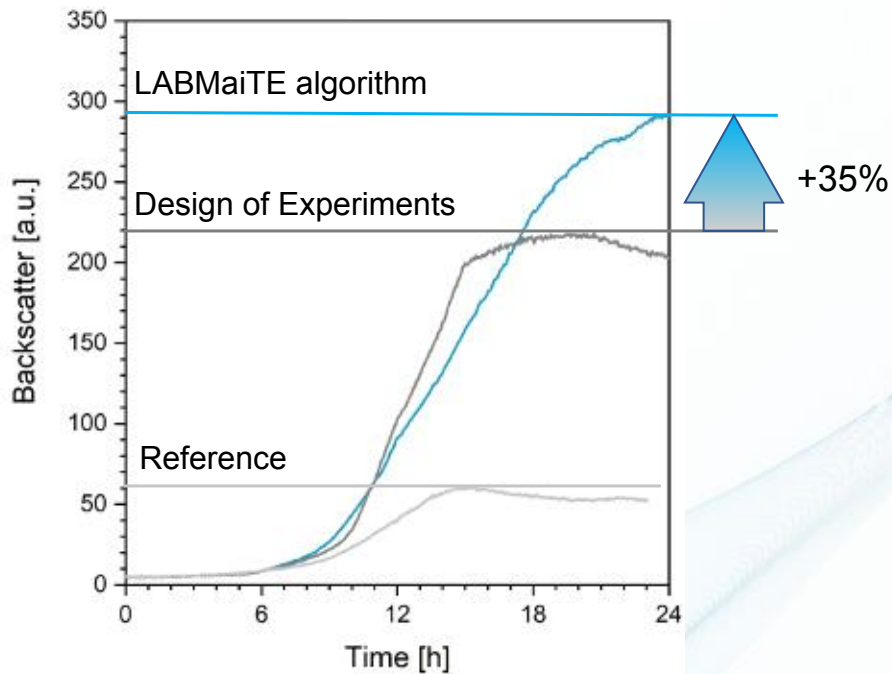
Biomass

Optimization Roadmap

Complexity

Biomass

Our Track Record



Organism: Bacteria
Target: Biomass
Nr. of variables: 9
Inputs: Vitamines, minerals
Culture vessel: Microplate (48 wells)
Optimization rounds: 2
Benchmark: DoE

Growth data for the microbioreactor cultivation of bacterium *Sporosarcina pasteurii*,
Lapierre et al., 2025

Optimization Roadmap

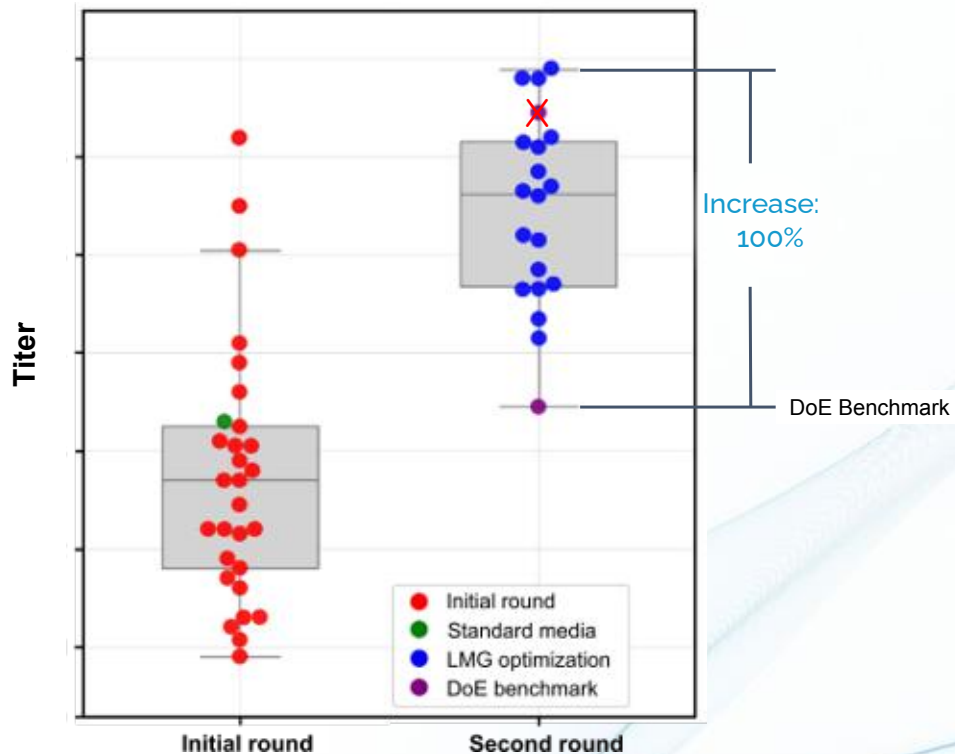
Complexity

Product (titer, EA)

Biomass

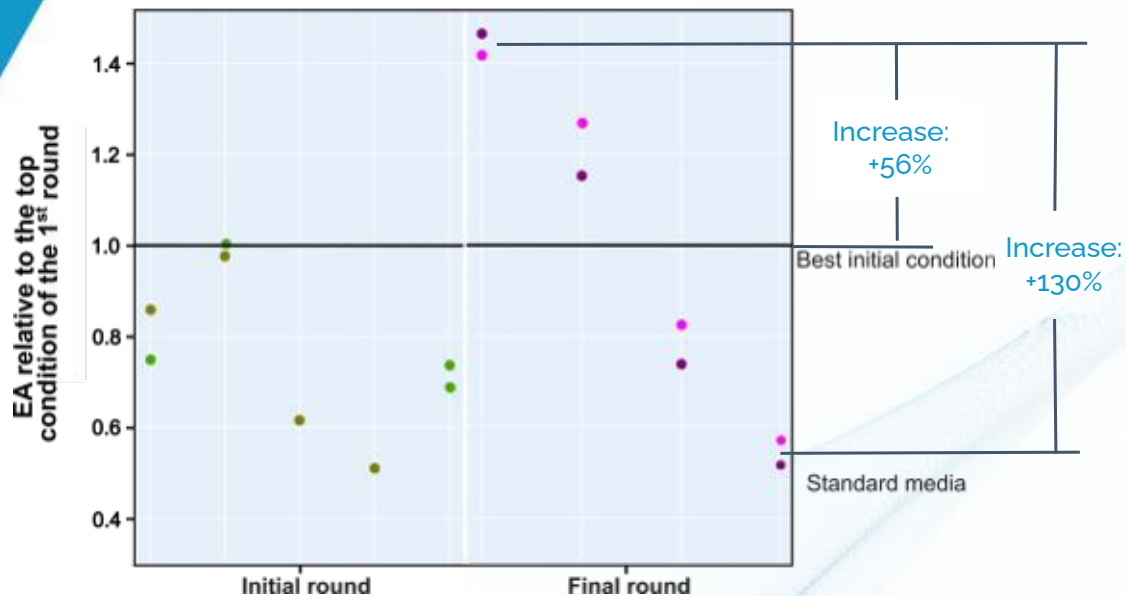


Our Track Record



Organism: Mammalian cells
Target: Product titer
Nr. of variables: 14
Inputs: Media blends
Culture vessel: 21 shake flasks
Optimization rounds: 1
Benchmark: Customer internal optimization and off-the-shelf media

Our Track Record



Organism: Bacteria

Target: Enzymatic activity

Nr. of variables: 6

Inputs: Media components

Culture vessel: 8 Bioreactors

Optimization rounds: 3

Benchmark: Standard media, initial best condition

Optimization Roadmap

Complexity

Cost & output

Product (titer, EA)

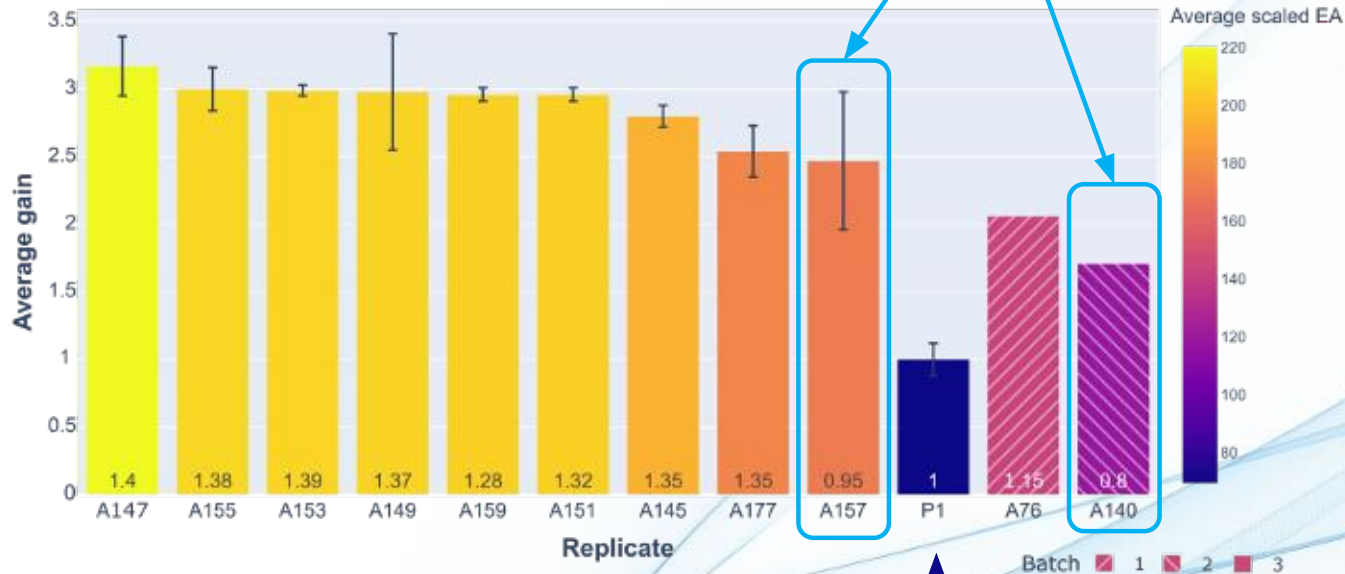
Biomass



Cost Optimization

Reduced cost with higher process readout

10-Best Performing Replicates



Reference Condition

Optimization Target:
balancing media
components cost vs.
process readout

Inputs: 10
Batch size: 48
Optimization rounds: 3

+150 % Output

-5% Cost

+70% Output

-20% Cost

Optimization Roadmap

Complexity

AI-powered experimental design service for your bioprocess development



Cell growth, product titer or other targets



Your IP stays with you



No limitation on organisms

Cost & output



Product (titer, EA)



Biomass



Offered as commercial service today

Optimization Roadmap

Complexity



Transfer learning

Informed scale up

Feed strategy

Multi objective

Development time

Cost & output

Product (titer, EA)

Biomass

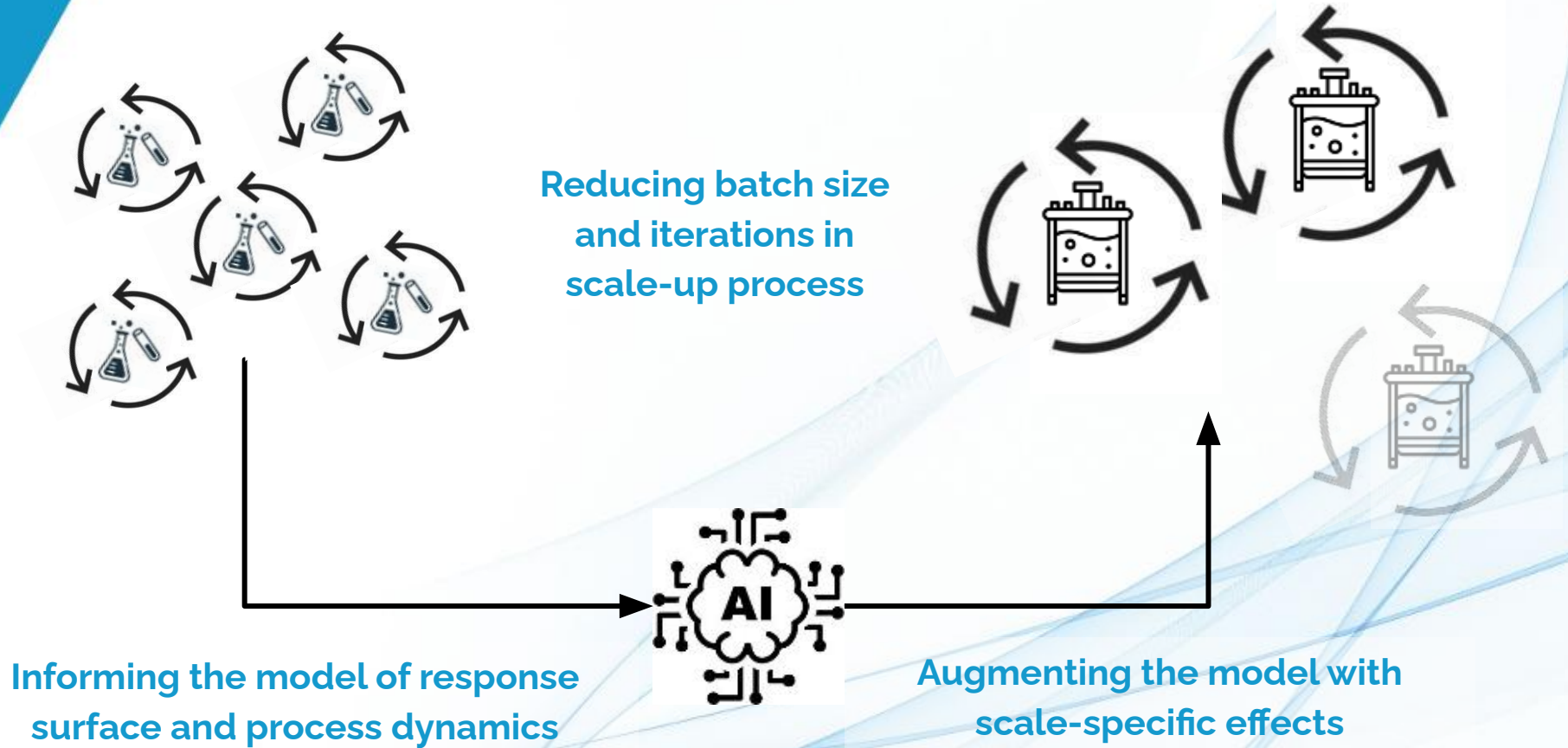
R&D starting in 2026

Coming soon



Offered as commercial service today

Informed Scale-up



Contract Service

- ✓ Cases for which we expect low technical risk (our track record is reference)
- ✓ Blinded data accepted
- ✓ Individual quotes case by case

R&D Partnership

- ✓ Challenging cases with considerable technical risk e.g. feeding strategy optimization; more than 20 variables; optimization of other process parameters
- ✓ Blinded data accepted
- ✓ If aligned with our interests or R&D roadmap
- ✓ Reduced price
- ✓ We co-invest

Research Collaboration

- ✓ We define our own research goals and objectives in line with the collaborative project goal
- ✓ Joint knowledge creating and shared IP
- ✓ Full transparency of data and processes required

Thank You!



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