The background is a dark teal color with faint, semi-transparent images of various microorganisms, including rod-shaped bacteria and spherical phages, scattered across the frame. The text is centered in the upper half of the image.

PHAGE STACK

ML for precision Antimicrobials



Antibiotic Resistance: The Next Global Health Crisis

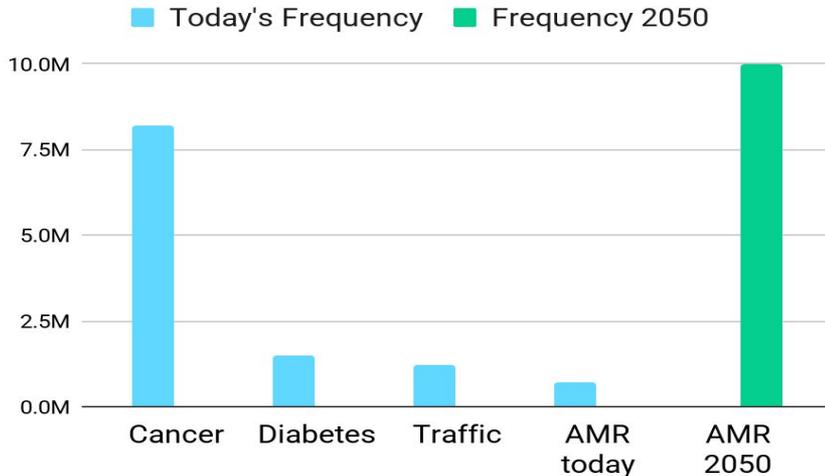
AMR: Serious today catastrophic tomorrow

1 million lives are lost each year—rising to 10 million by 2050.

Antibiotics are failing.

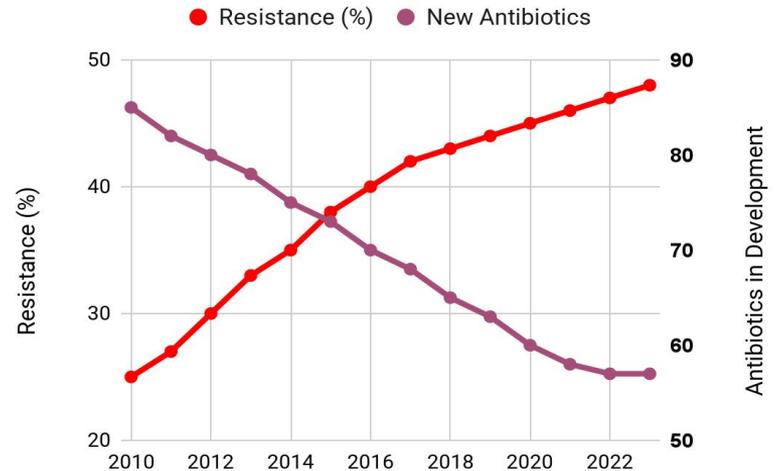
The world needs precision solutions now.

Health Threats



Development of new Antibiotics declining

WHO and CDC reports show an increase in antibiotic resistance and a decline in the development of new antibiotics. No new class of antibiotics has been developed since the 1990s.





Saved by Phages: *The Case of Isabelle Holdaway*

The Challenge

At just 15, Isabelle faced a deadly, drug-resistant Mycobacterium abscessus infection after a lung transplant. Doctors gave her **less than a 1% chance of survival**



The Solution

Her parents advocated for **phage therapy**. Scientists at the University of Pittsburgh developed the world's first phage cocktail □ precisely tailored to her infection



The Outcome

Within weeks her **condition stabilized** and chronic skin lesions healed. Isabelle's case became a landmark success for modern phage therapy

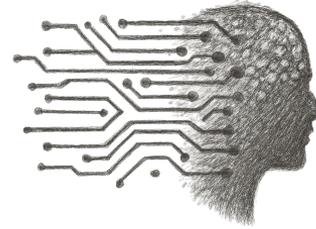


“Isabelle’s recovery was a miracle. With Phagestack technology, it can become routine.”



Finding the Needle in the Haystack

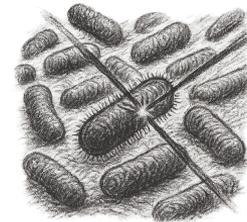
The Solution: **machine-learning**
the computer predicts the genome of the match
seconds of computation replace expensive lab work



The Challenge: an **infinite number of phages** in nature,
finding the right one is a "needle in the haystack" problem
Trial-and-error searching is simply too slow



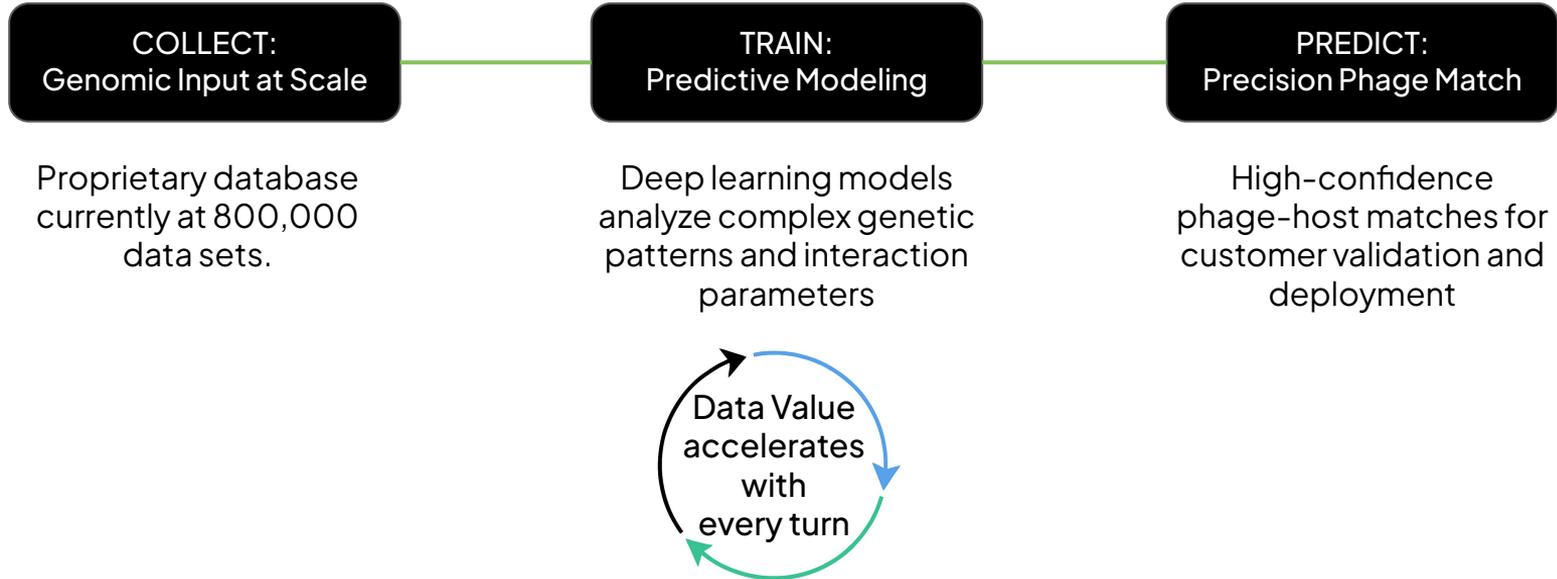
The AMR weapon: **phages**
phages kill bacteria with laser precision,
but the right phage must be found



“The search ends when Phagestack predicts the perfect match”



The Phagestack Data Engine: Creating an Unmatched Algorithmic Moat



Our proprietary database -**currently at 800000+ data sets**- curated to Phagestack standards, including unique phage-host interaction pairs and genomic sequences. It is a self-optimizing engine that powers better predictions and ensures market leadership.



Meet the founders



Dr. Ewald Fernbach

Co-Founder

CEO

- Led production & database teams in biotech
- Commercial leadership in prior startup
- Drives strategy & investor relations



Dr. Jonas Fernbach

Co-Founder

CSO

- Bioinformatics lead at ETH & UCPH
- Expert in synthetic biology & ML pipelines
- Leads algorithm design & phage modeling



Robert Faber

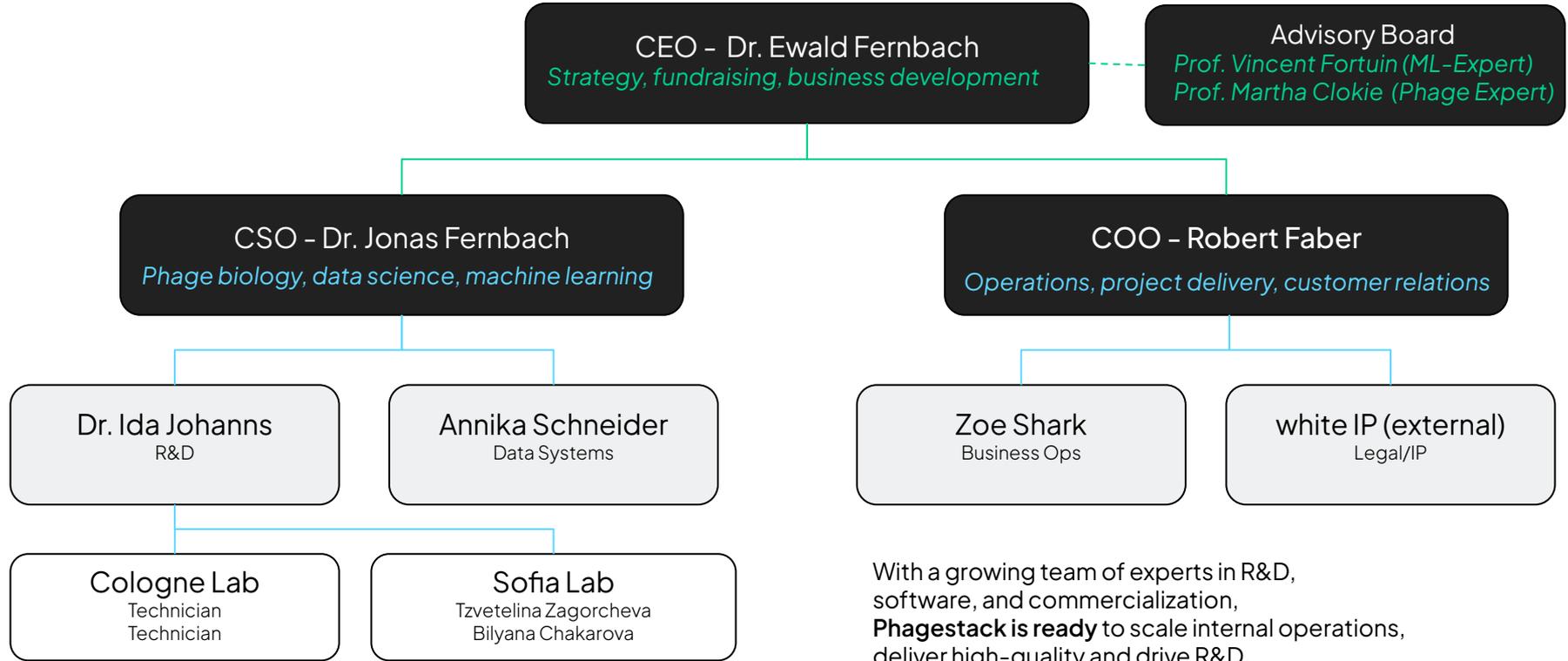
Co-Founder

COO

- Operational excellence on global scale
- Startup scaling & change management
- Shapes delivery strategy & client engagement



The Phagestack Team



With a growing team of experts in R&D, software, and commercialization, **Phagestack is ready** to scale internal operations, deliver high-quality and drive R&D.



A data and IP platform monetizing antimicrobial resistance at scale

Scalable Revenue

DaaS Subscriptions & Usage

- Subscriptions to prediction models and databases
- Usage-based pricing per prediction / project

**Recurring, scalable,
high-margin revenue**

Phage IP Licensing

- Licencing of predicted, validated and patented phages
- Milestone payments and downstream royalties

**Non-linear upside per
successful development
program**

Execution Layer

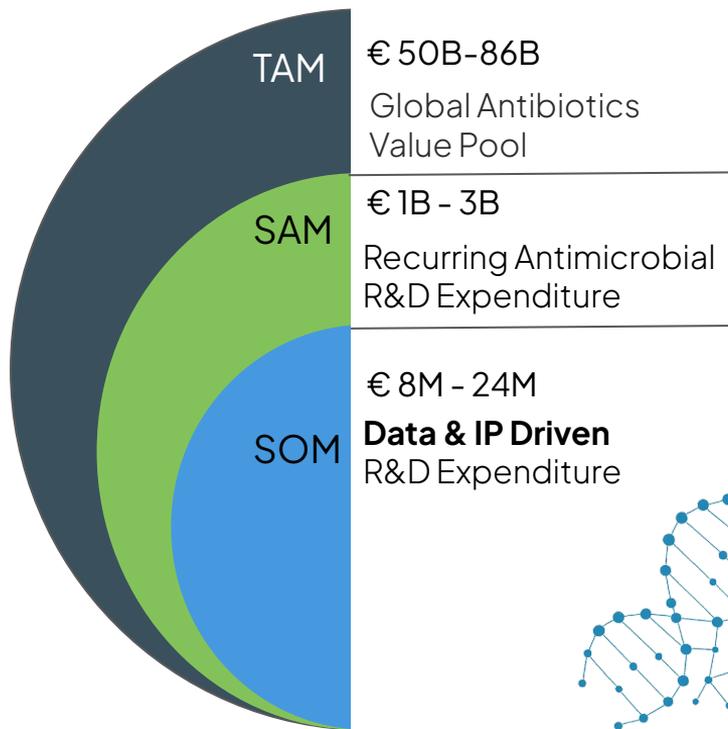
Services & Biologics

- Generate proprietary ML training data and biologic assets
- Enable rapid response to emerging resistant strains
- Support real-world deployment and validation

Scaling law: Every new resistant bacterial strain creates a new prediction, licensing, and revenue opportunity



A global, recurring market driven by antimicrobial resistance



The €86B global antibiotics market represents the **economic value pool funding antimicrobial innovation**. As resistance accelerates, an increasing share of this value **shifts toward prediction, data intelligence, and IP-driven solutions**. Phagestack captures this shift by **monetizing the data and IP layer** behind antimicrobial R&D through **subscriptions, usage-based predictions, and phage licensing**.

Phagestack does not sell antibiotics - it monetizes the intelligence and IP funded by this market



Competitive Landscape: Phagestack's Full-Stack Advantage

	Stage/ Rev.	DaaS for Pharma & Other Fields	High- Throughput	AI- /ML driven	Custom R&D	Biologics Supply
Phagestack		✓	✓	✓	✓	✓
Locus biosciences, USA	\$5.4M	✗	✓	✓	✓	✓
BiomX (merged with APT), USA	\$15.5M	✗	✗	✗	?	✓
Proteon Pharmaceuticals, PL	\$10.7M	✗	✗	✗	✓	✓
PrecisionPhage FIN	N/A	✗	✗	?	✓	✓

“Only Phagestack combines AI intelligence, automation, and biologics to transform how antimicrobials are developed.”



Traction: Validated Model, Clear Roadmap to Series A

TO DATE (2023 - 2025):
VALIDATION & MOMENTUM

Foundation Built:



Product: PhageStack DB beta launched



Partnerships: signed 3 strategic R&D partnerships securing proprietary data



Funding: secured 2 non-dilutive grants



Legal: 1st patent application submitted and Bulgarian lab (EOOD) established

NEXT 18 MONTHS (€2.0M SEED):
SCALE & REVENUE

ACHIEVE: €783,500 ARR by Q2 2028!

1. Commercial Launch: launch PhageStack DB V1 for DaaS revenue



2. Capacity & Speed: prototype the "Juicer" to scale biologics sales and data collection



3. Operational Hub: establish lab operations at Biocampus Cologne

4. Financial Goal: unlock the €3M series A financing by validating the commercial DaaS/biologics model



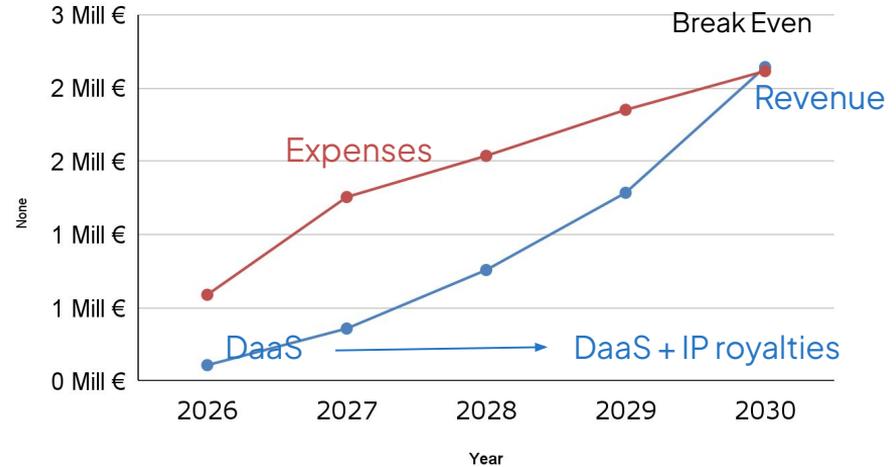
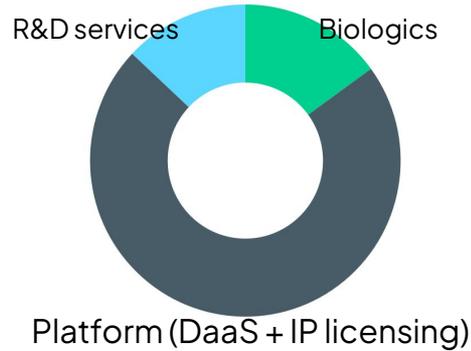


Scaling revenue through platform subscriptions and IP licensing

€2M seed + €3M series A to reach profitability

Seed validates DaaS revenue and first IP licences

Revenue mix at scale (post Series A)



Primary investments (value -creating):

- ✓ Personnel
- ✓ Lab Automation
- ✓ Data Scaling

Funding Momentum:

- ✓ NRW Bank
- ✓ Private investors
- ✓ €150K soft commitments

Revenue scales with resistance events and IP adoption — not headcount



Join Us in Redefining the Fight Against AMR

*Power the Next Generation of Precision Antimicrobials
Through Data, Machine Learning, and Scalable Innovation.*

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