

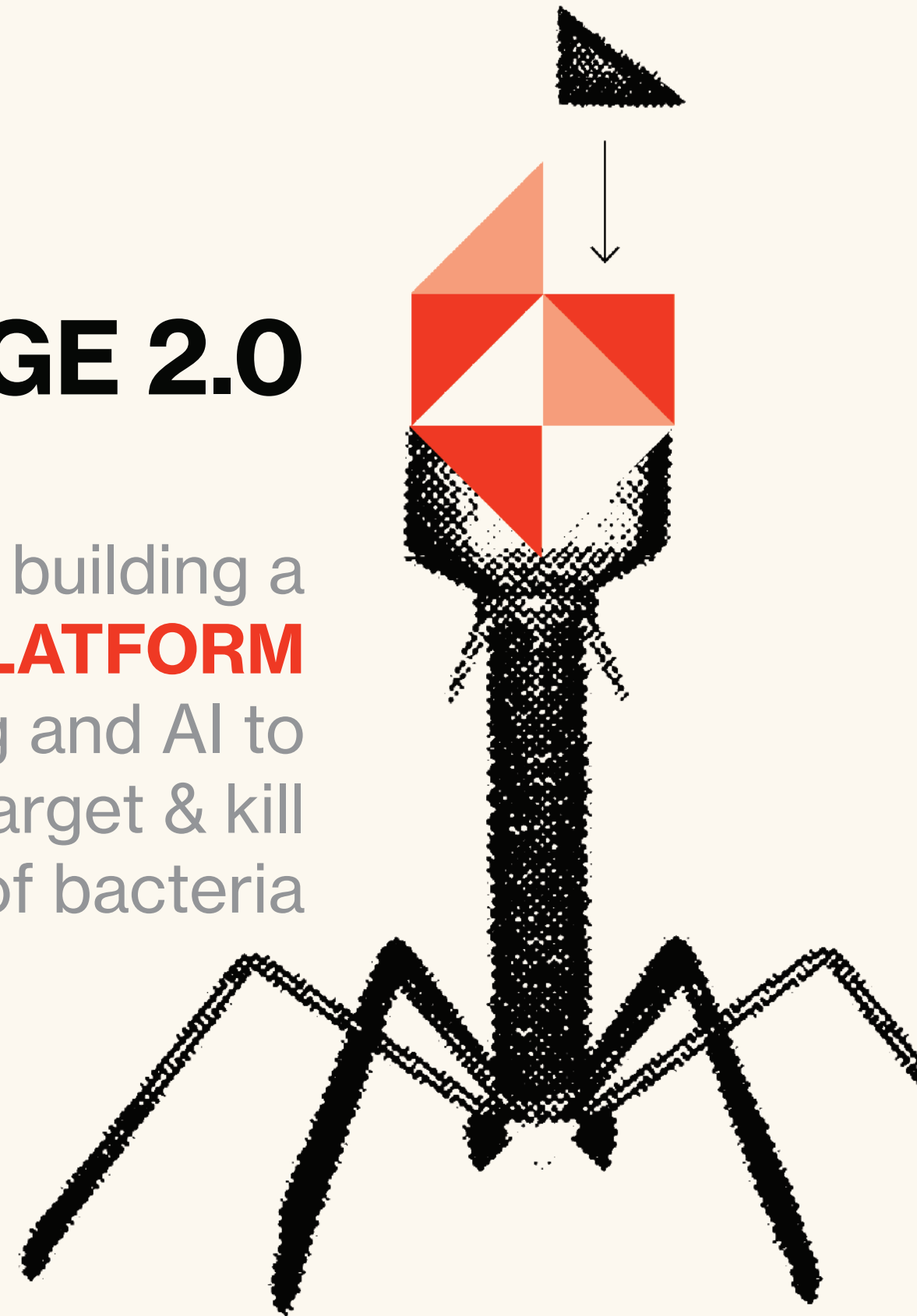
# FELIX

**DESIGNING VIRUSES TARGETING ANY BACTERIA**

Introduction  
2023

# PHAGE 2.0

We are building a  
**VIRUS DESIGN PLATFORM**  
using machine learning and AI to  
design custom phage to target & kill  
any kind of bacteria



# Managing Bacteria is a \$550 Billion Dollar Opportunity

Customers are demanding chemical free, safe, effective, and green ways to target and eliminate bacteria

## Personal Care

\$25 Billion



## Antibiotics

\$42 Billion



## Microbiome Health

\$5 Billion



## Womens Health

\$5 Billion



## Skin Care

\$22 Billion



## Plant Health

\$55 Billion



## Oral Care

\$53 Billion



## Animal Health

\$5 Billion



## Water Contamination

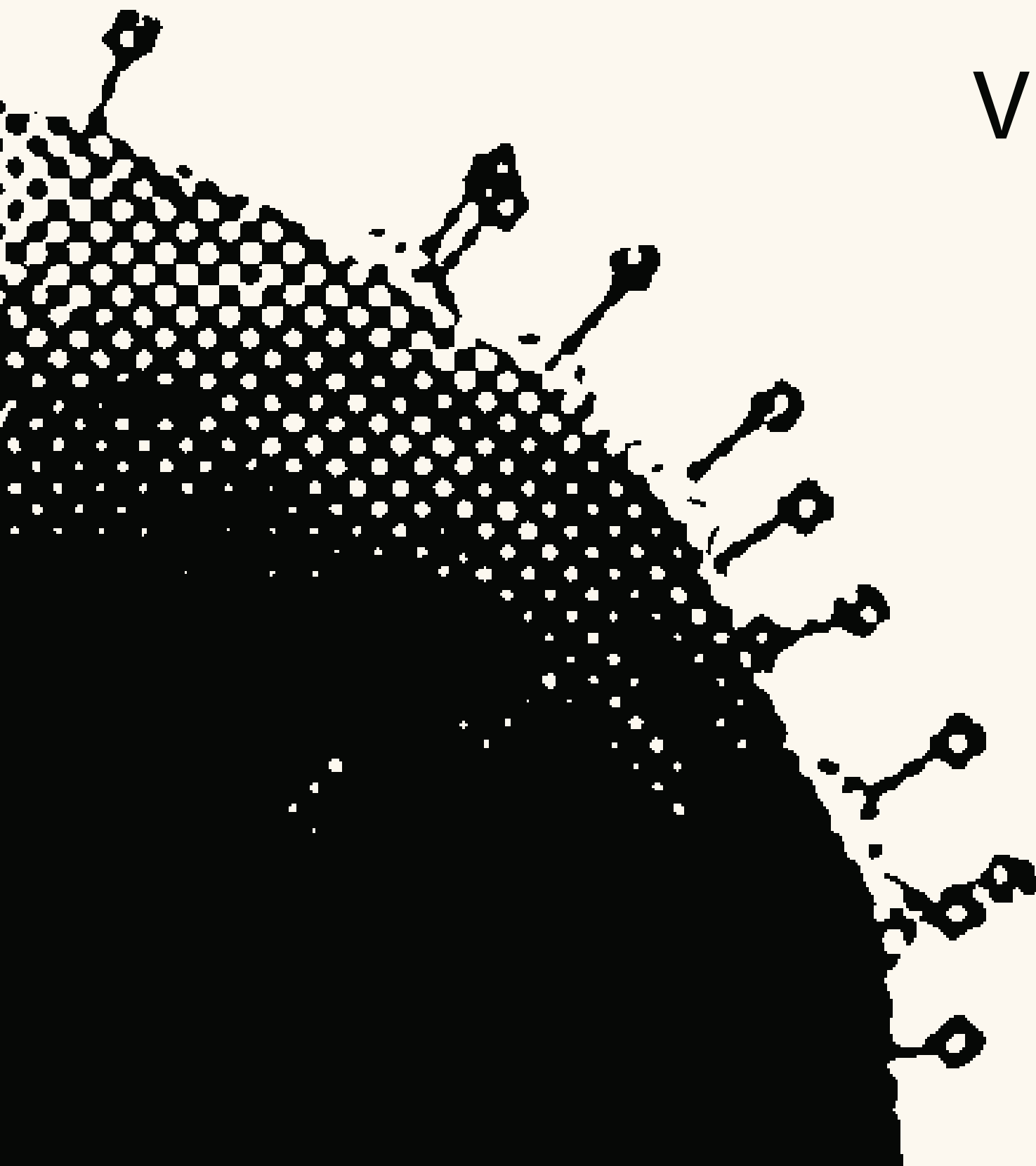
\$260 Billion



## Methane Emissions

\$90 Billion





# Viruses that kill bacteria known as **PHAGE**

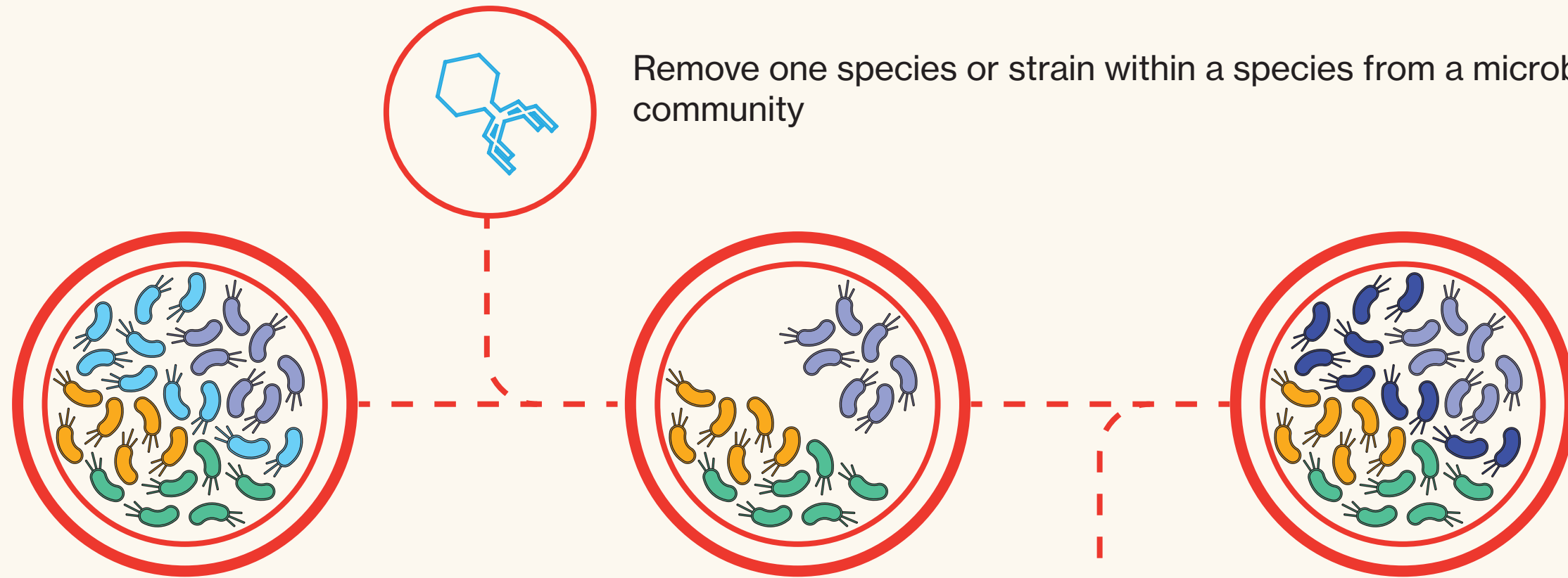
have many advantages over traditional chemicals



KILLS ALL BACTERIA	✓	X
HIGH SPECIFICITY	✓	X
LOW TOXICITY	✓	X
NOVEL MODE OF ACTION	✓	X
LOW DOSE	✓	X
TARGETS BIO-FILMS	✓	X
CHEMICAL FREE	✓	X

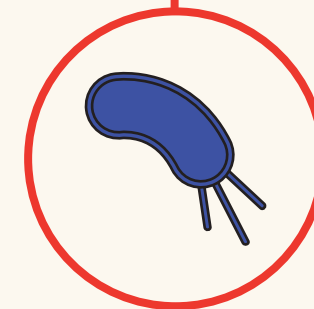
In addition to being powerful alternatives to antibiotics, which are known to kill both bad and good bacteria

# PHAGE are Powerful Microbiome Editors

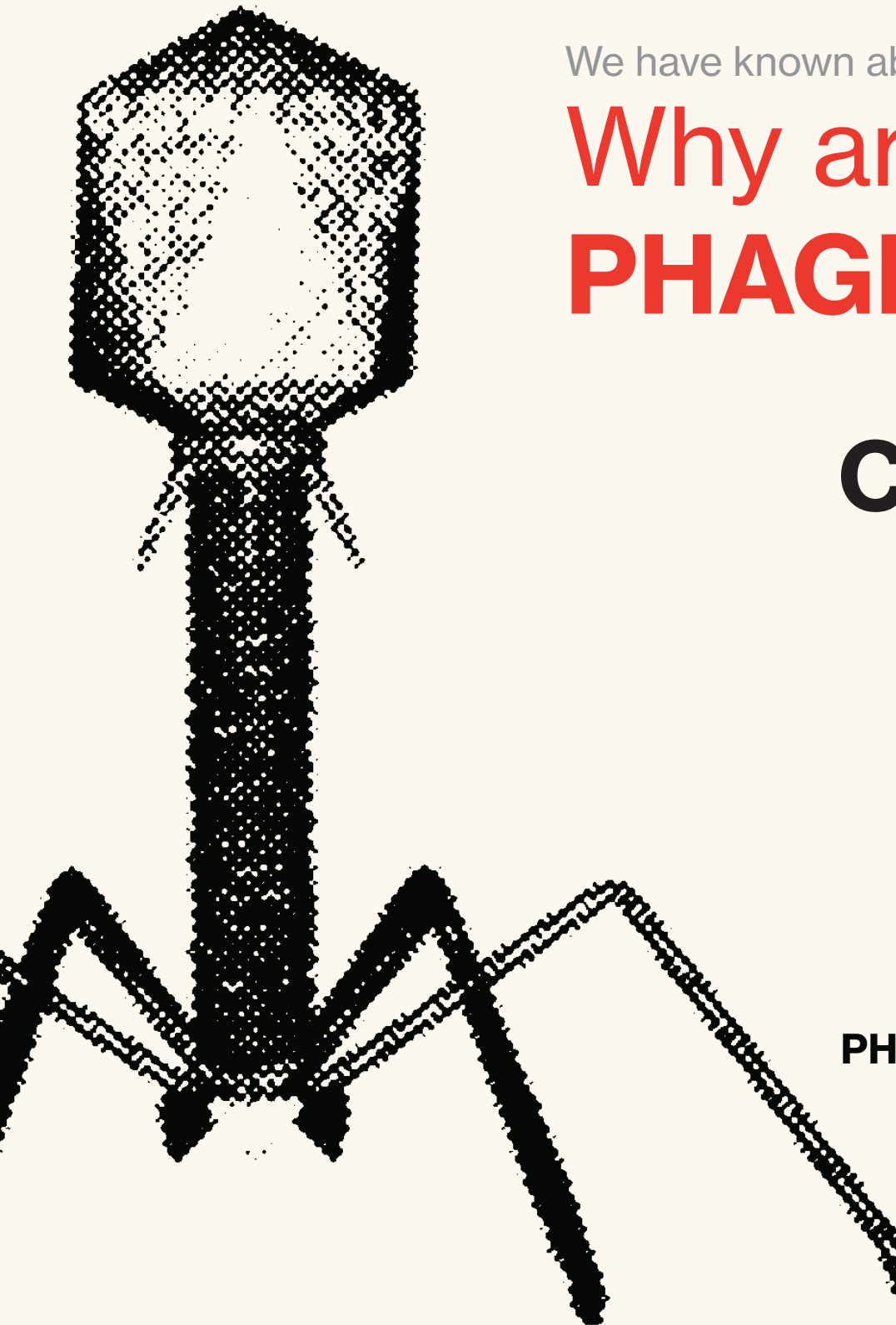


## APPLICATIONS:

- 1) Create niches for living therapeutics - increases engraftment
- 2) Remove microbes driving disease
- 3) Validate roles of strain or species in disease



Restore microbiome balance with introduction of natural or engineered microbe



We have known about the potential of phage for over **100 years**

# Why are there no approved **PHAGE PRODUCTS?**

## **CHALLENGE**

## **FELIX SOLUTION**

**PHAGE ARE HARD TO  
ENGINEER**

**FELIX PHAGE PLATFORM**  
allows any phage to now be simply engineered

**PHAGE HAVE NARROW  
HOST RANGES**

**FELIX PHAGE PLATFORM**  
expands host ranges

**PHAGE RESISTANCE RAPIDLY  
EVOLVES**

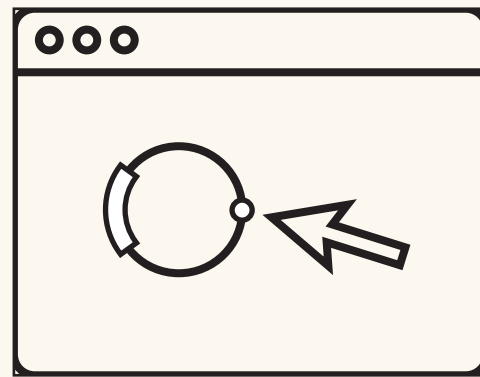
**FELIX PHAGE PLATFORM**  
identifies targets to delay & mitigate resistance

The power of synthetic phage realized by the

# Felix PHAGE Platform

1

## DESIGN

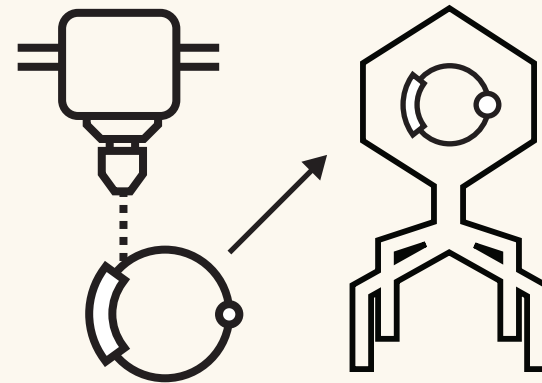


### Machine Learning

Informed design of virus genomes to enhance therapeutic traits of virus.

2

## BUILD

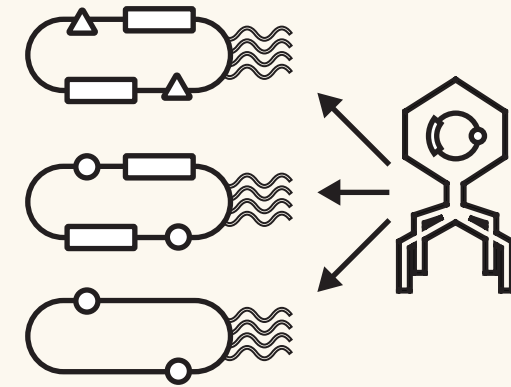


### Print and Boot Virus

DNA is printed/booted or engineered using CRISPR-CAS13a.

3

## TEST



### High Throughput Tools

Allow generation of large datasets relating virus genetics to behavior.

Building a broad portfolio of IP that protects our platform technology as well as the assets it creates

# Growing IP Portfolio



**HIGH THROUGHPUT  
CHARACTERIZATION**  
Identify and understand phage  
receptors & preempt resistance



**MACHINE LEARNING  
MODIFY BEHAVIOR**  
Harness technology to learn  
and build virus behavior



**GENETIC ENGINEERING  
USING CRISPR-Cas13A**  
Highly efficient approach  
to quickly engineer phages



**BUILDING LIVING  
SYNTHETIC PHAGE**  
Ability to build any phage  
from DNA sequence



**MODIFIED PHAGE IP  
FOR VARIOUS BACTERIA**  
Each virus out of the platform  
is patentable & can be licensed



**PHAGE COMPOSITION  
FOR PSEUDOMONAS**  
Licensed IP from Yale to commercialize  
phage therapy targeting Pseudomonas in CF