XYLENCER

Silencing *Xylella fastidiosa*


Mario
Pugliese Olive Farmer

Europe's olive trees threatened by spread of deadly bacteria

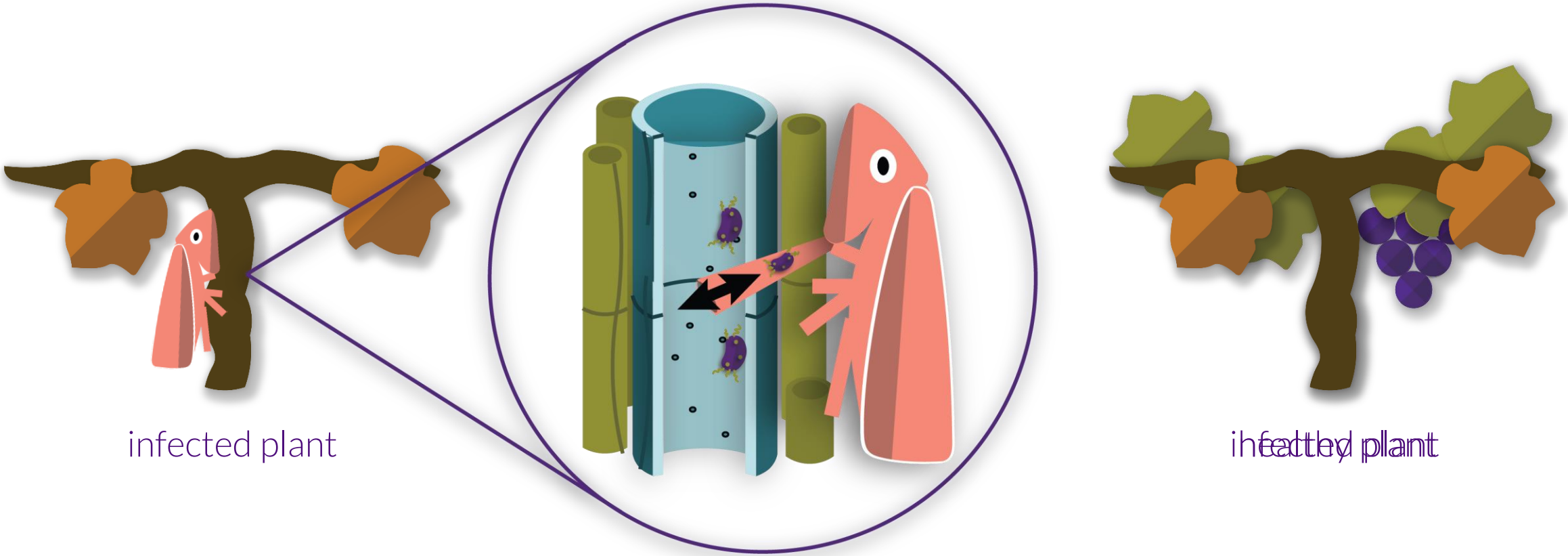
Xylella has forced the entire Brazilian citrus industry to go bankrupt

Prof. Eiko Kuramae
X. fastidiosa researcher, NIOO

Life-cycle

Solutions must consider the complex Plant-Vector-Microbe interactions

Prof. Rodrigo Almeida
X. fastidiosa researcher, UC Berkeley



Model: Current Situation

Diseased

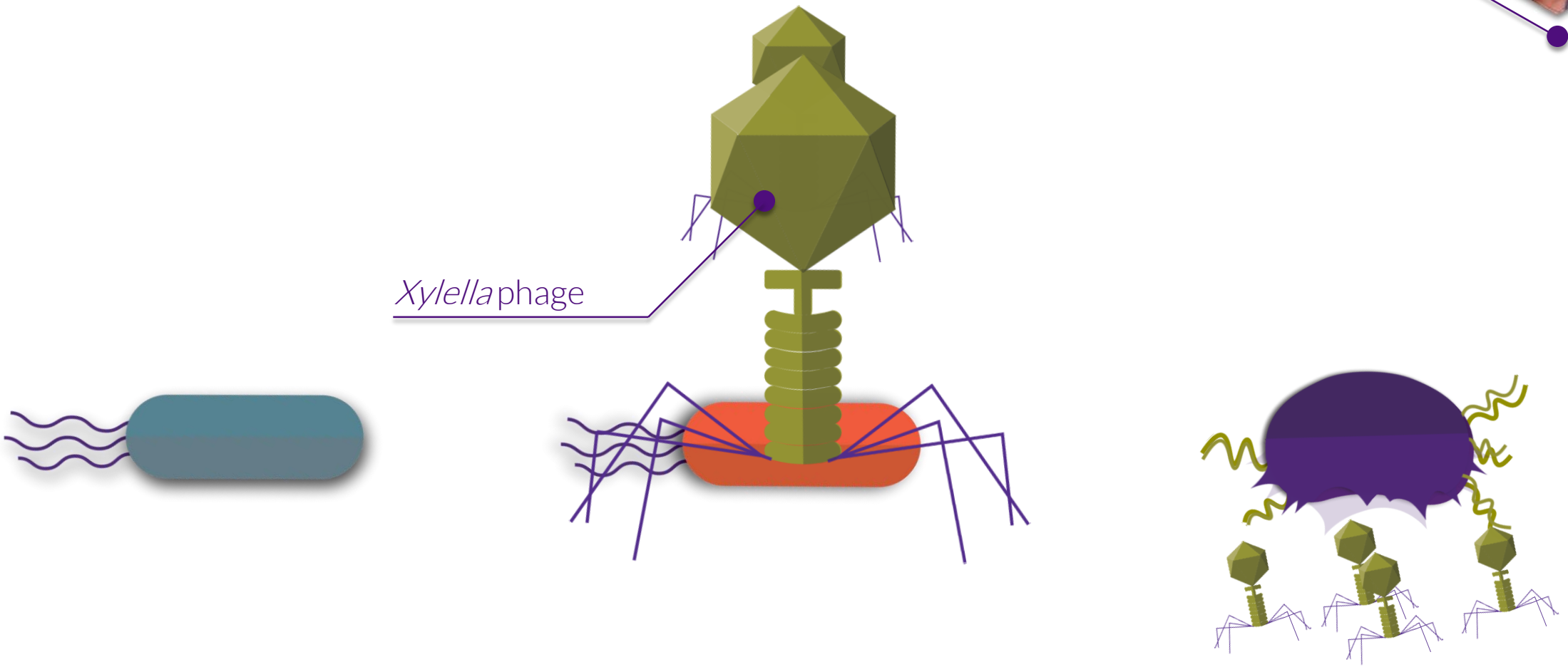
Healthy

3 years and 000 days

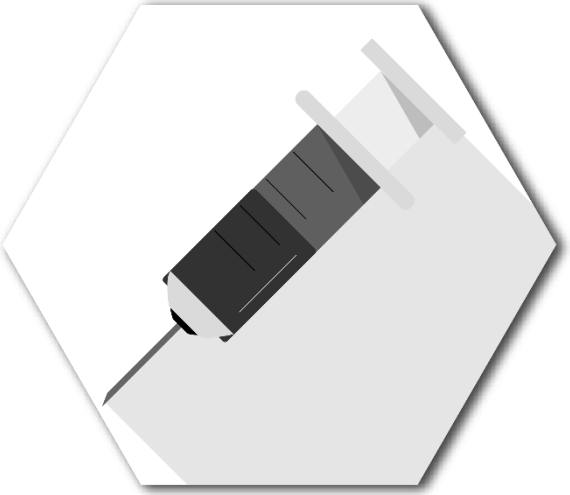
Phage Therapy

New solutions should not interfere with other ecosystems

Prof. Eiko Kuramae
X. fastidiosa researcher, NIOO

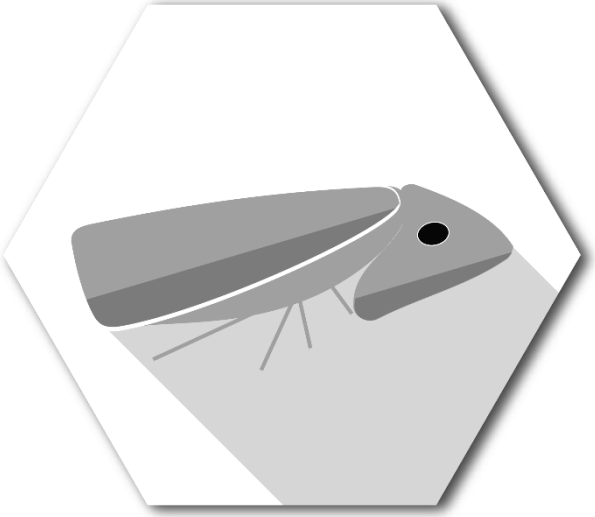


Pillars of Xylencer

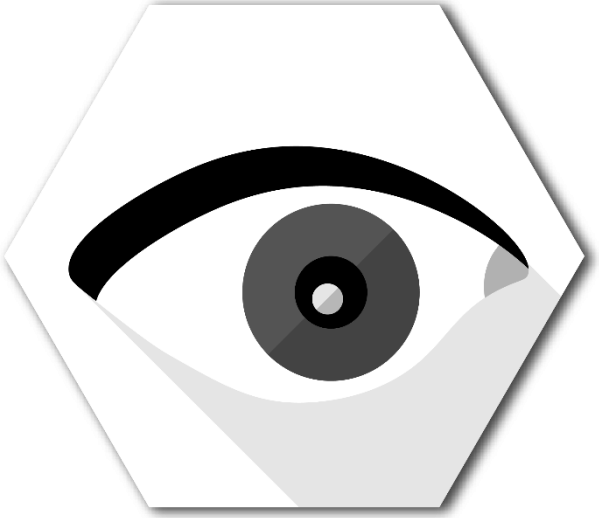


Delivery

Remediation

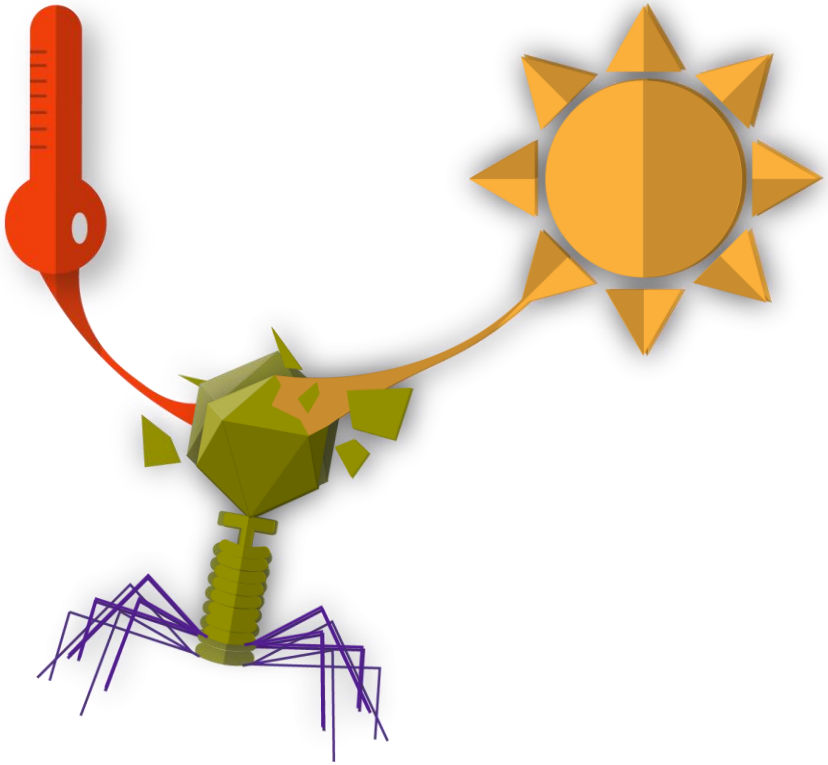


Spread



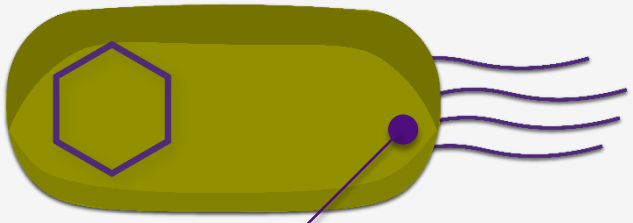
Detection

Phage Delivery

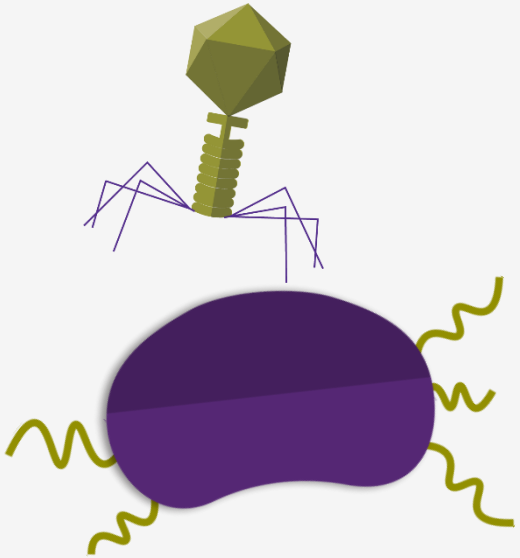


Phages are easily harmed by environmental factors

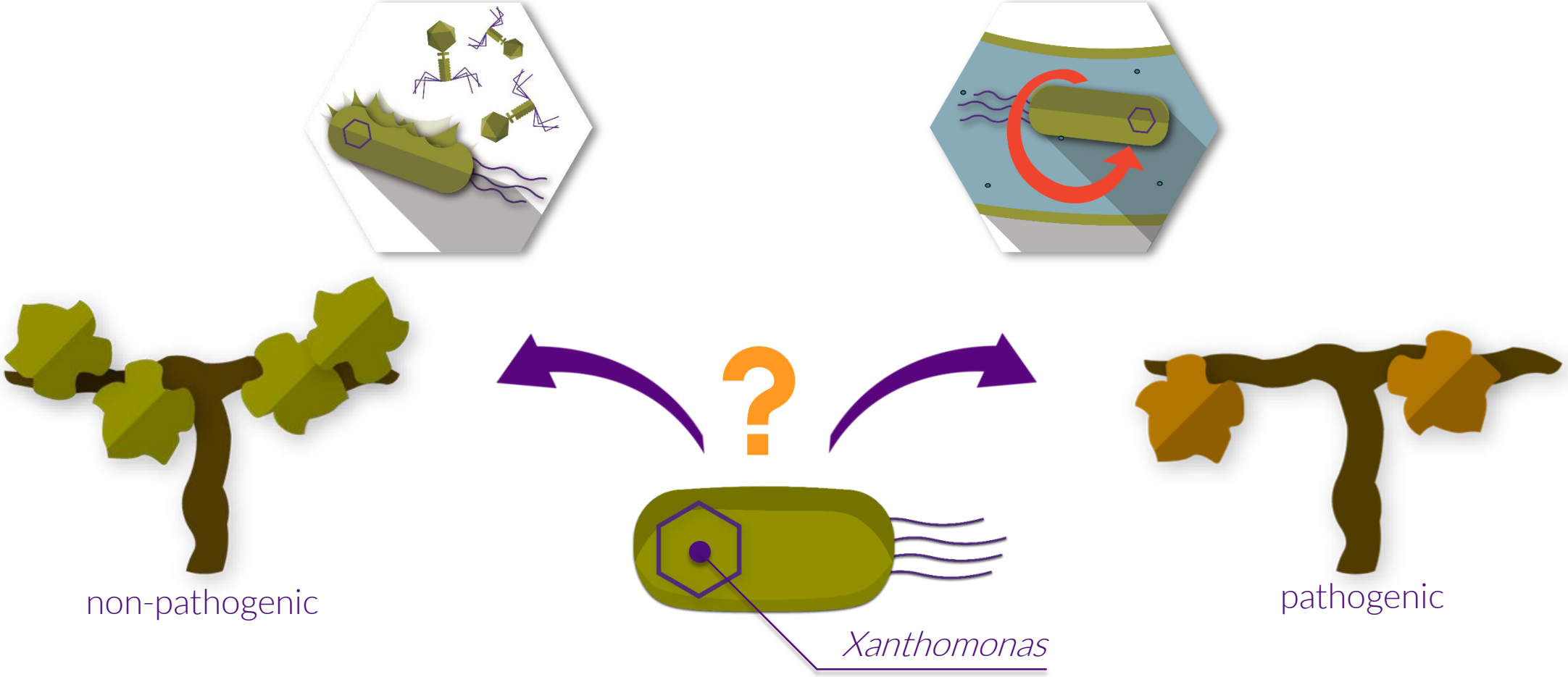
Prof. Britt Koskella
Phage therapy expert, UC Berkeley



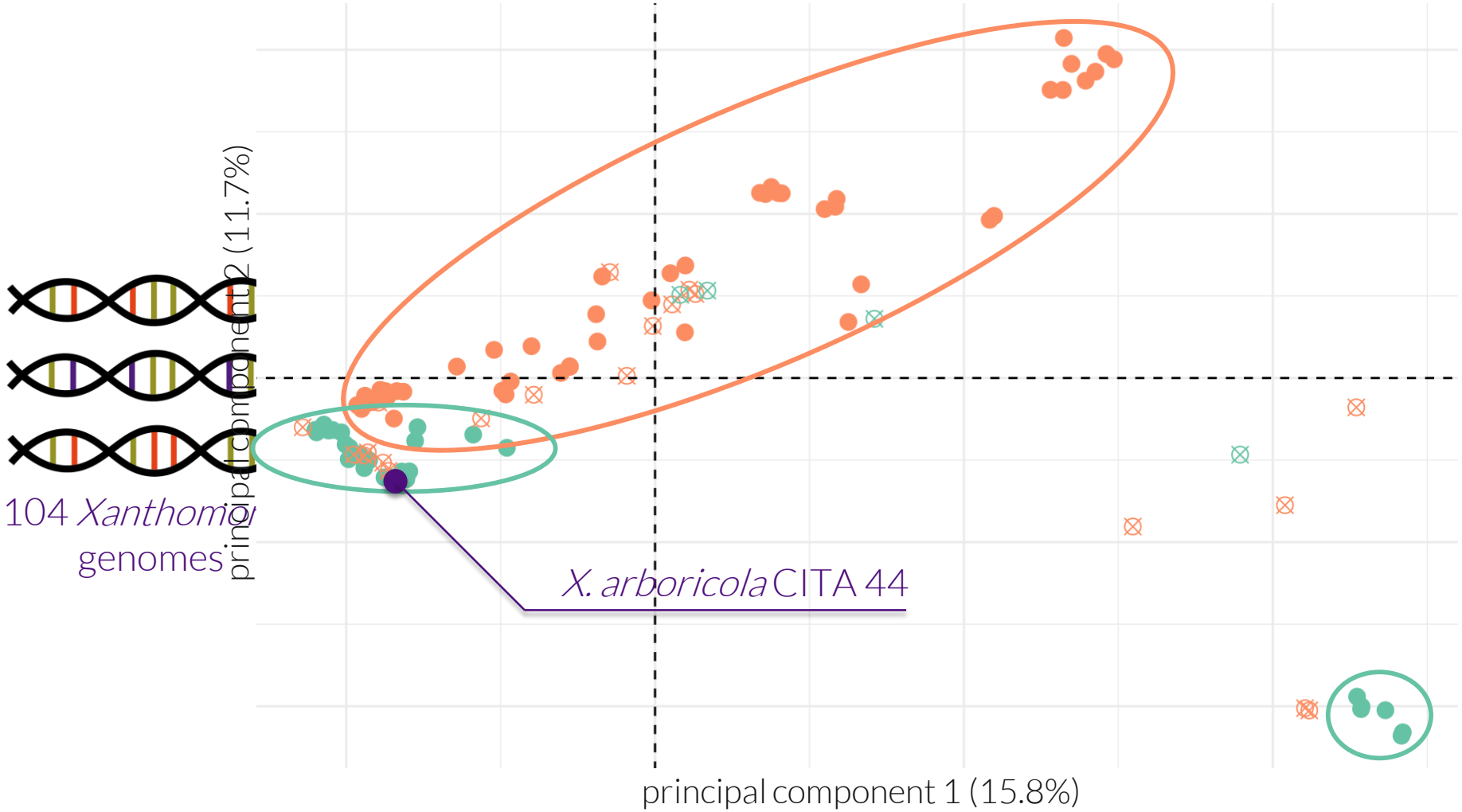
Phage Delivery Bacterium (PDB)

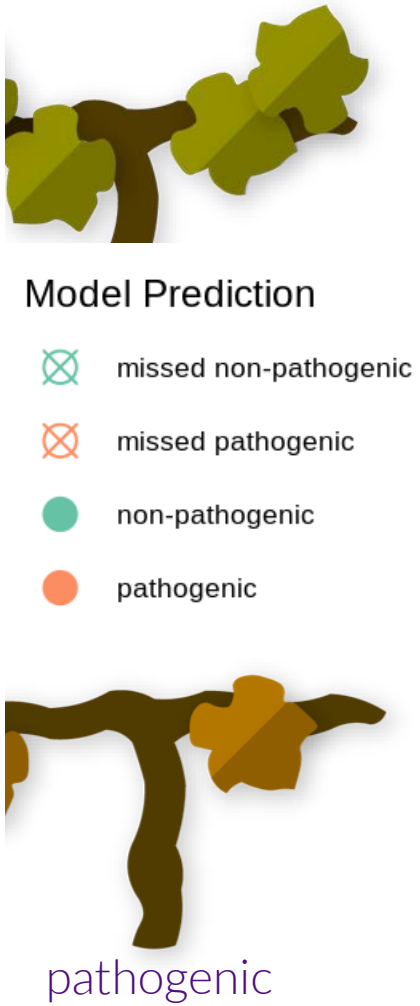


Phage Delivery Bacterium

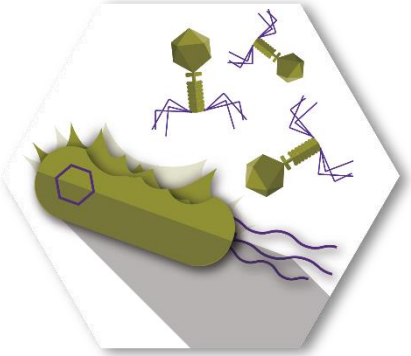


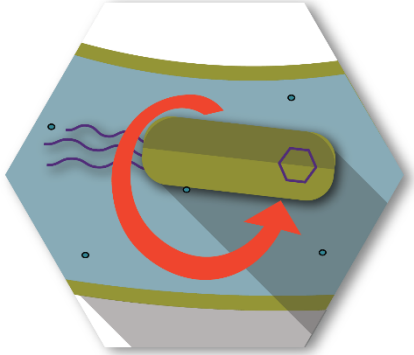
Selecting a Safe PDB

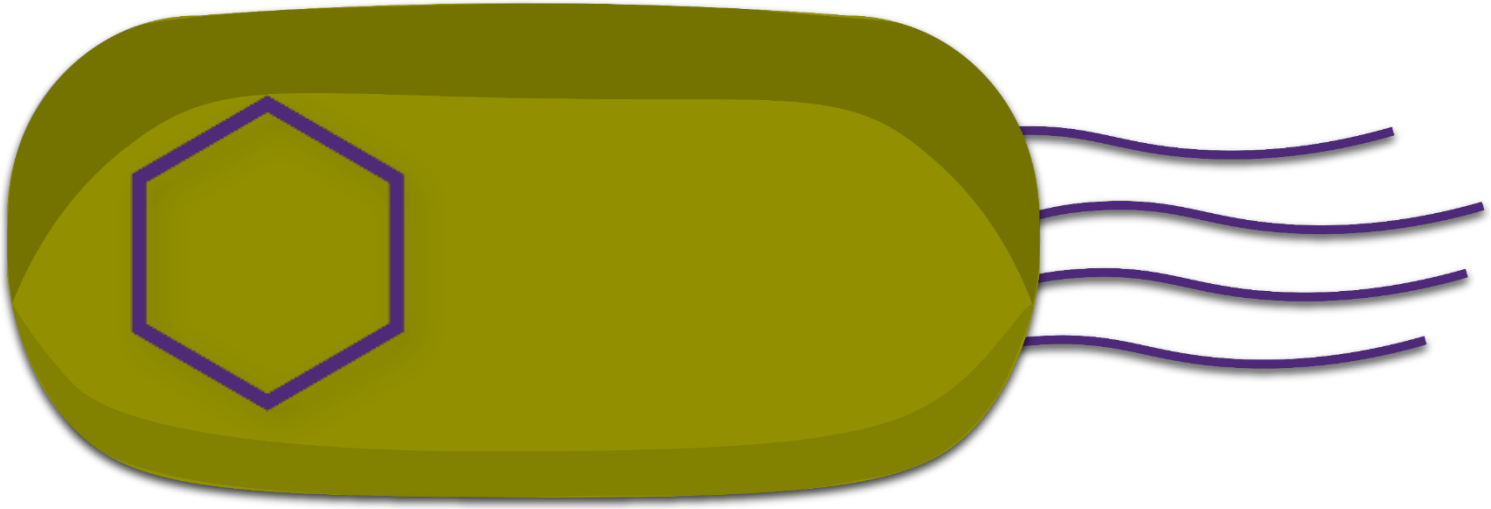




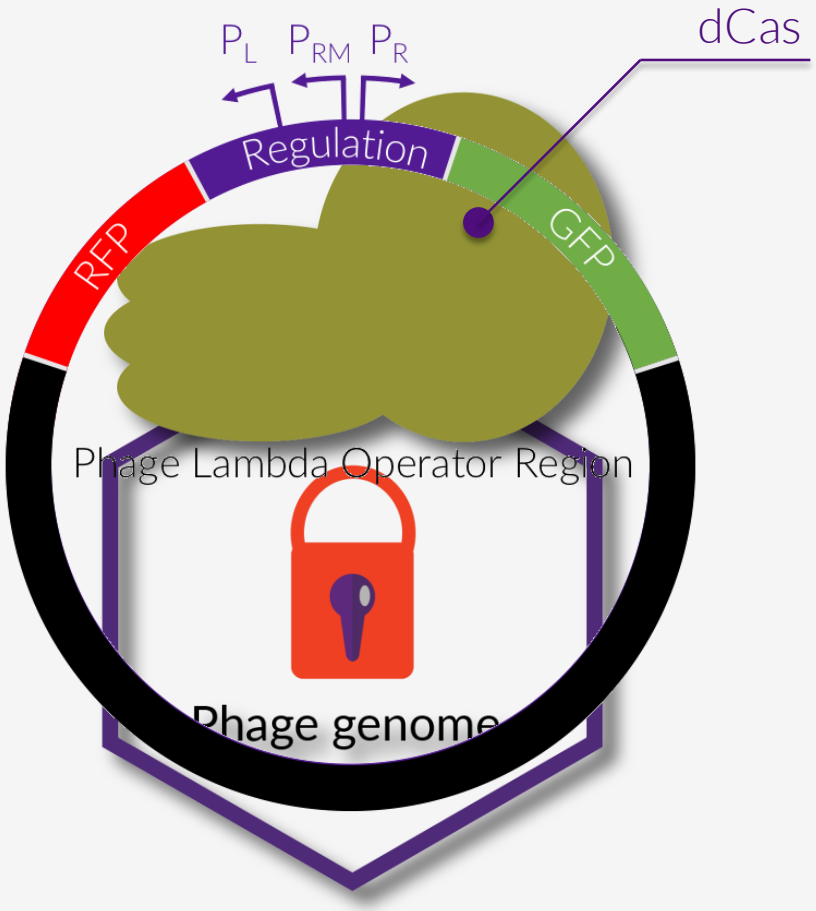
Phage Delivery Bacterium





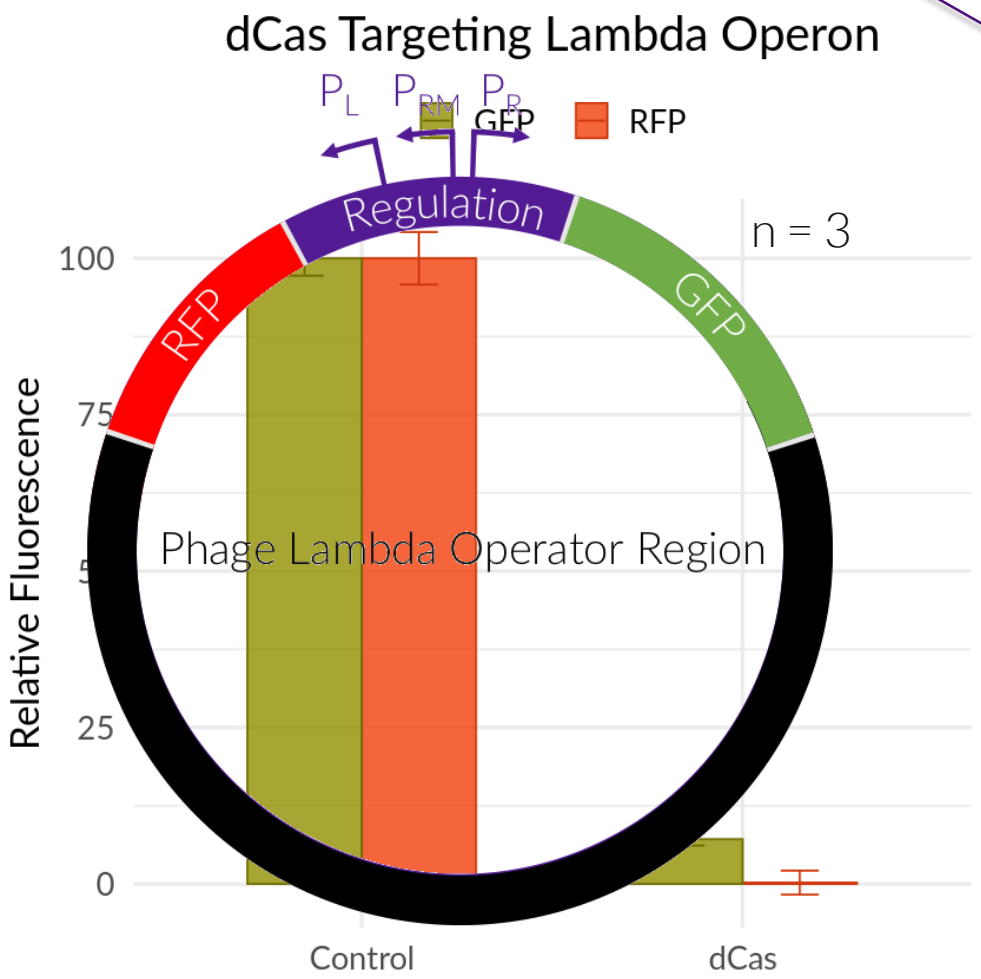


Phage Repression

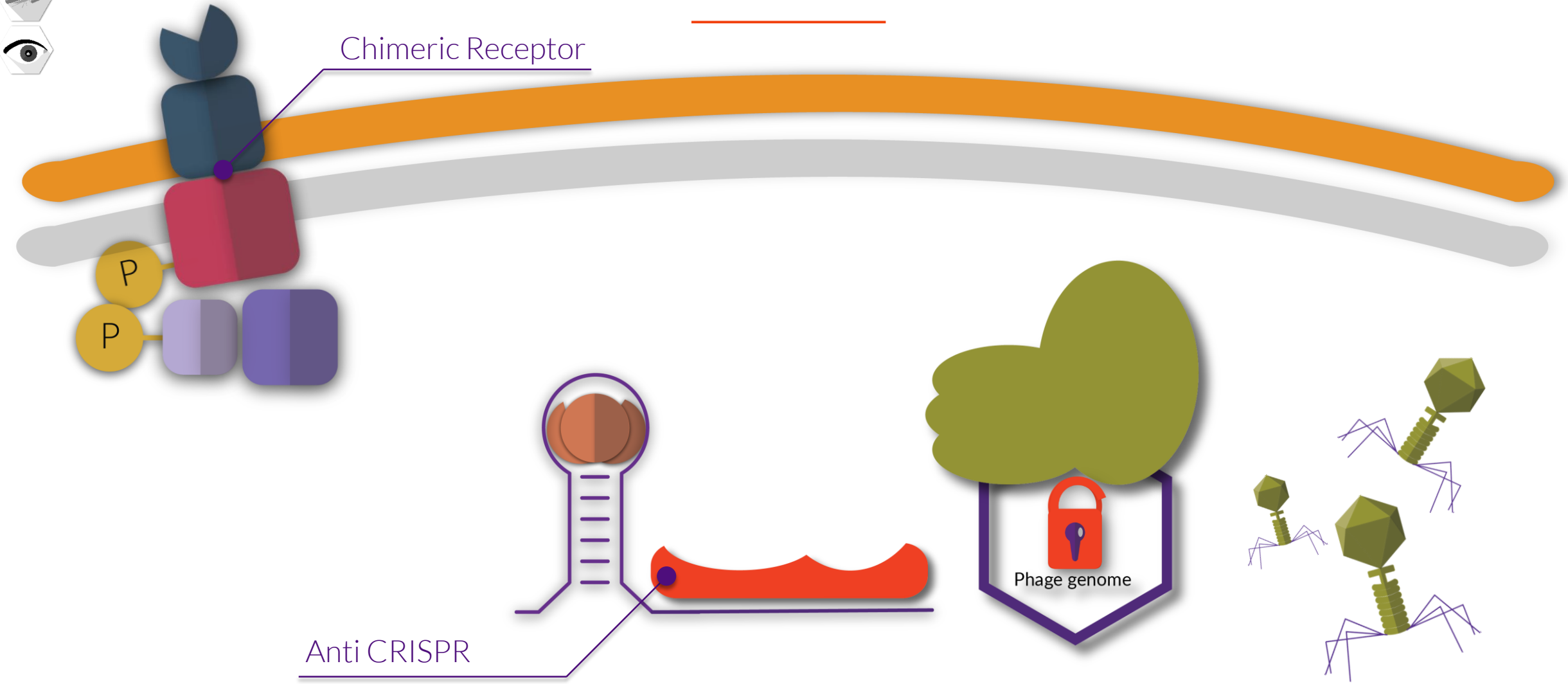


Prevent Dual-Use by applying a model system

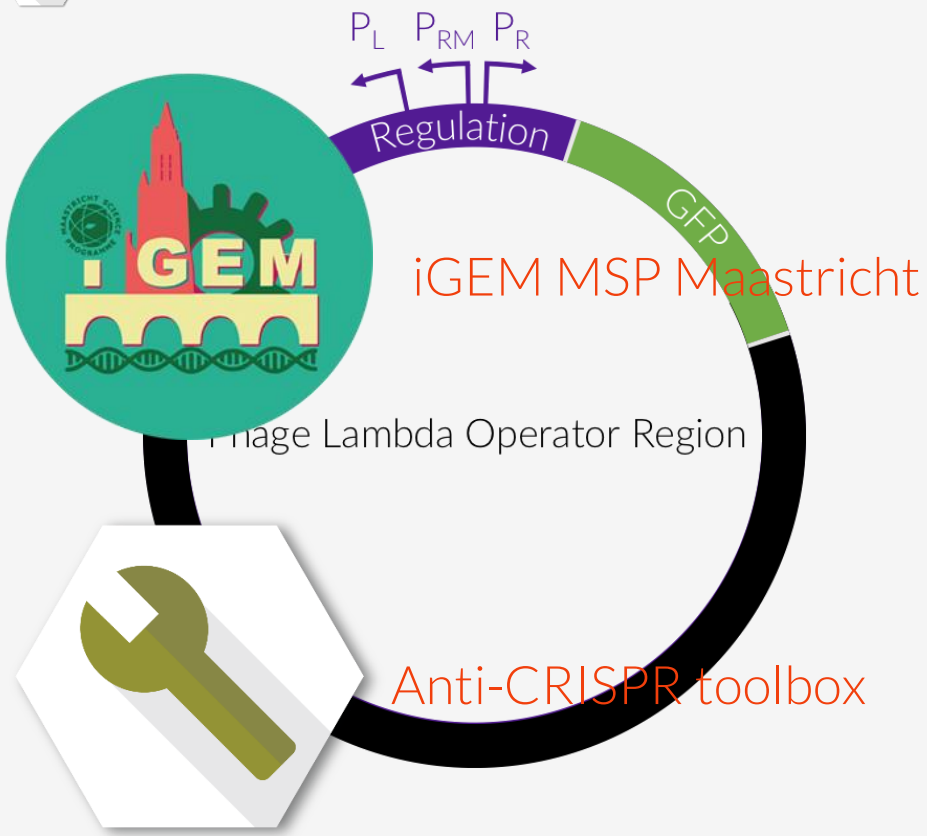
Dick Verduin
Biosecurity Expert

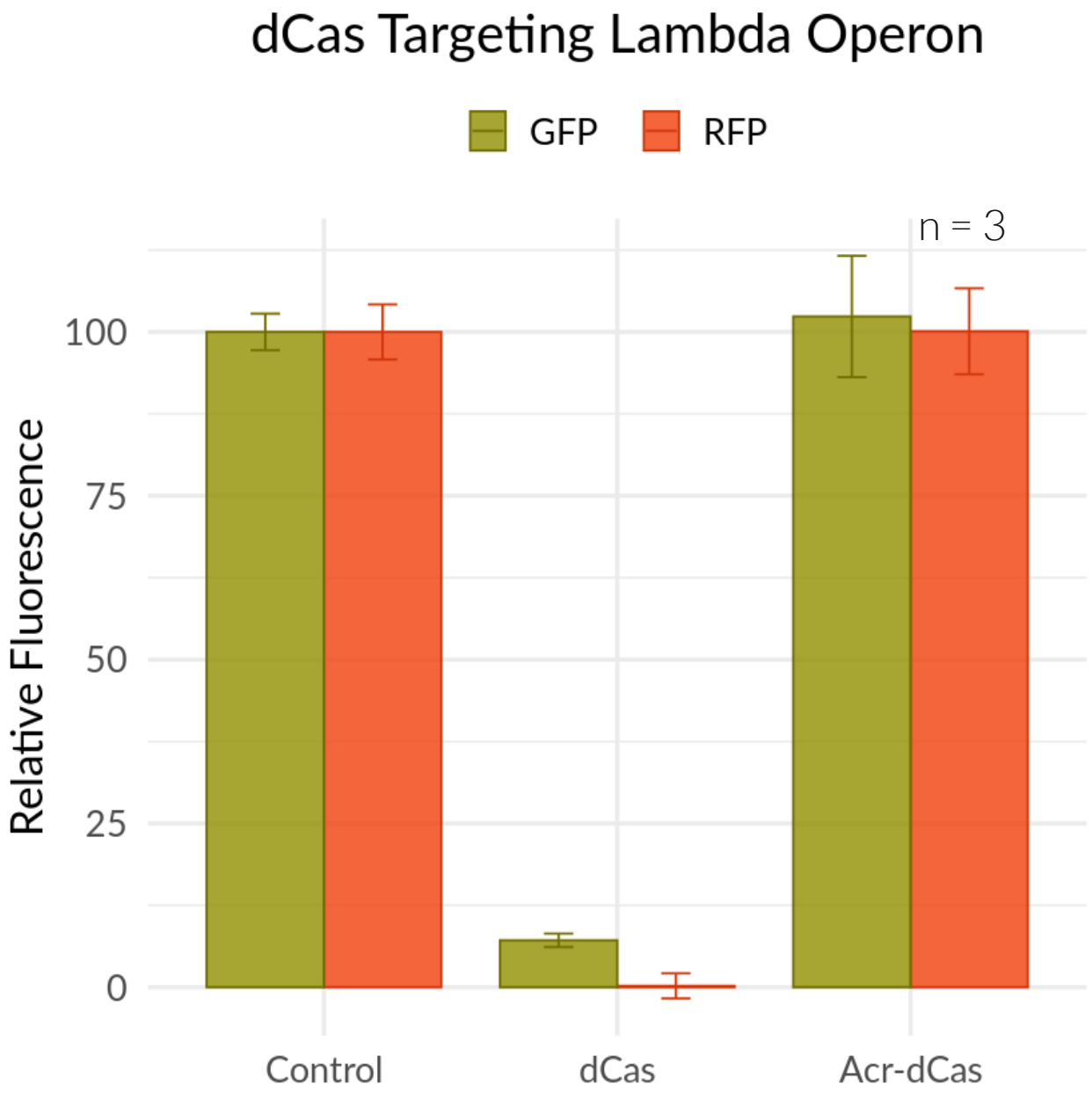


Sensing *X. fastidiosa*

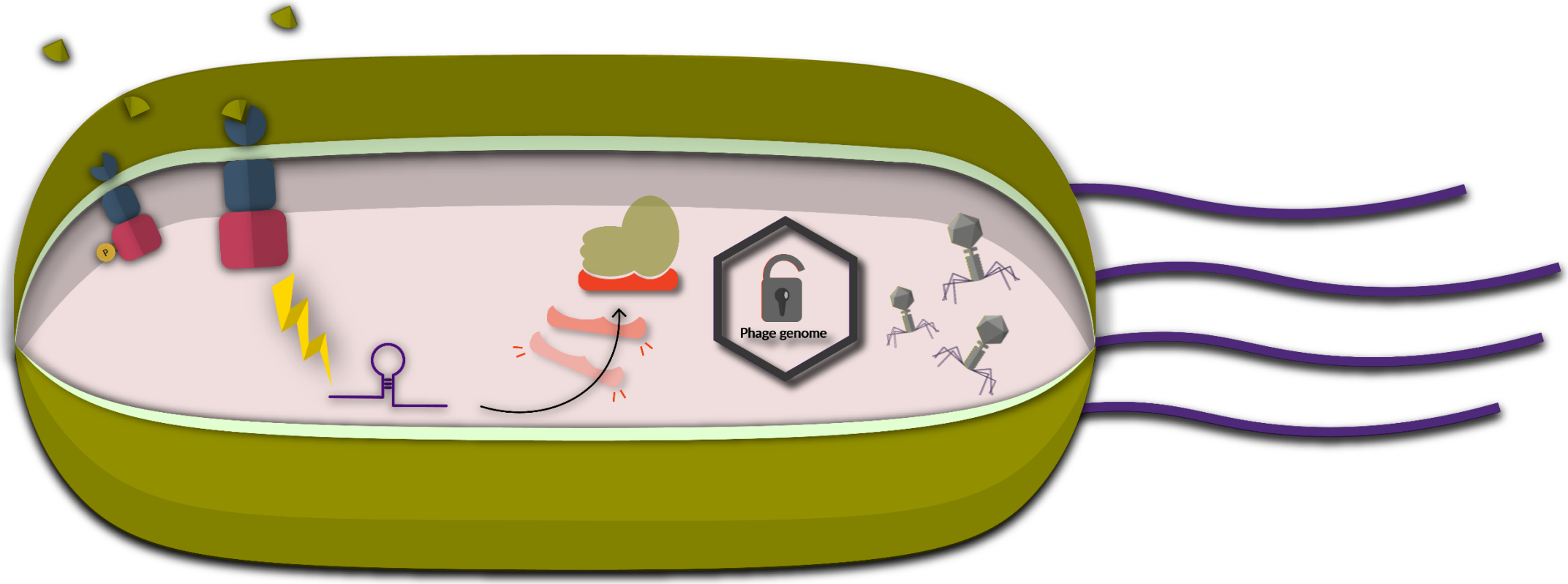


Relieving Repression





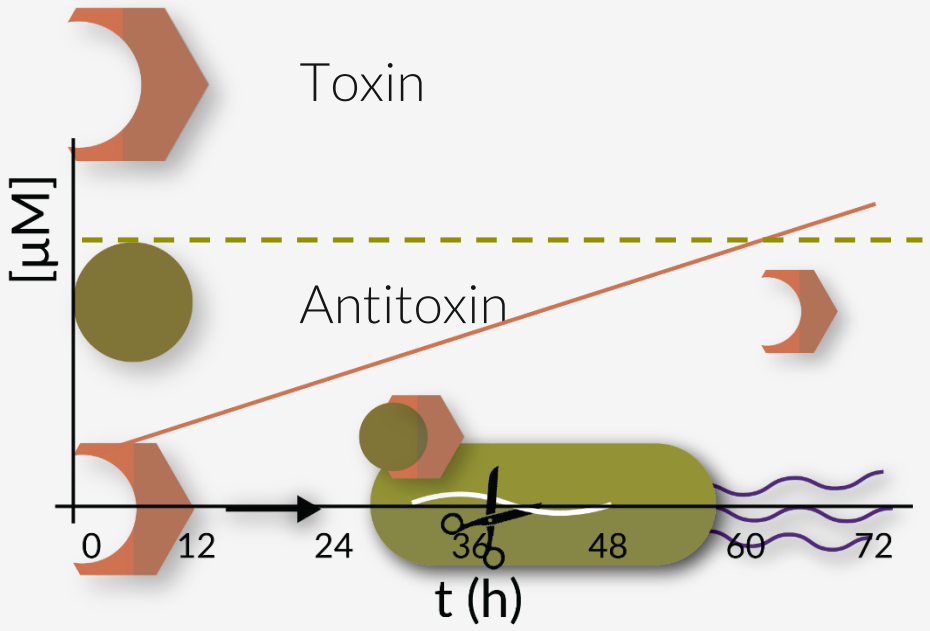
Phage Delivery Bacterium

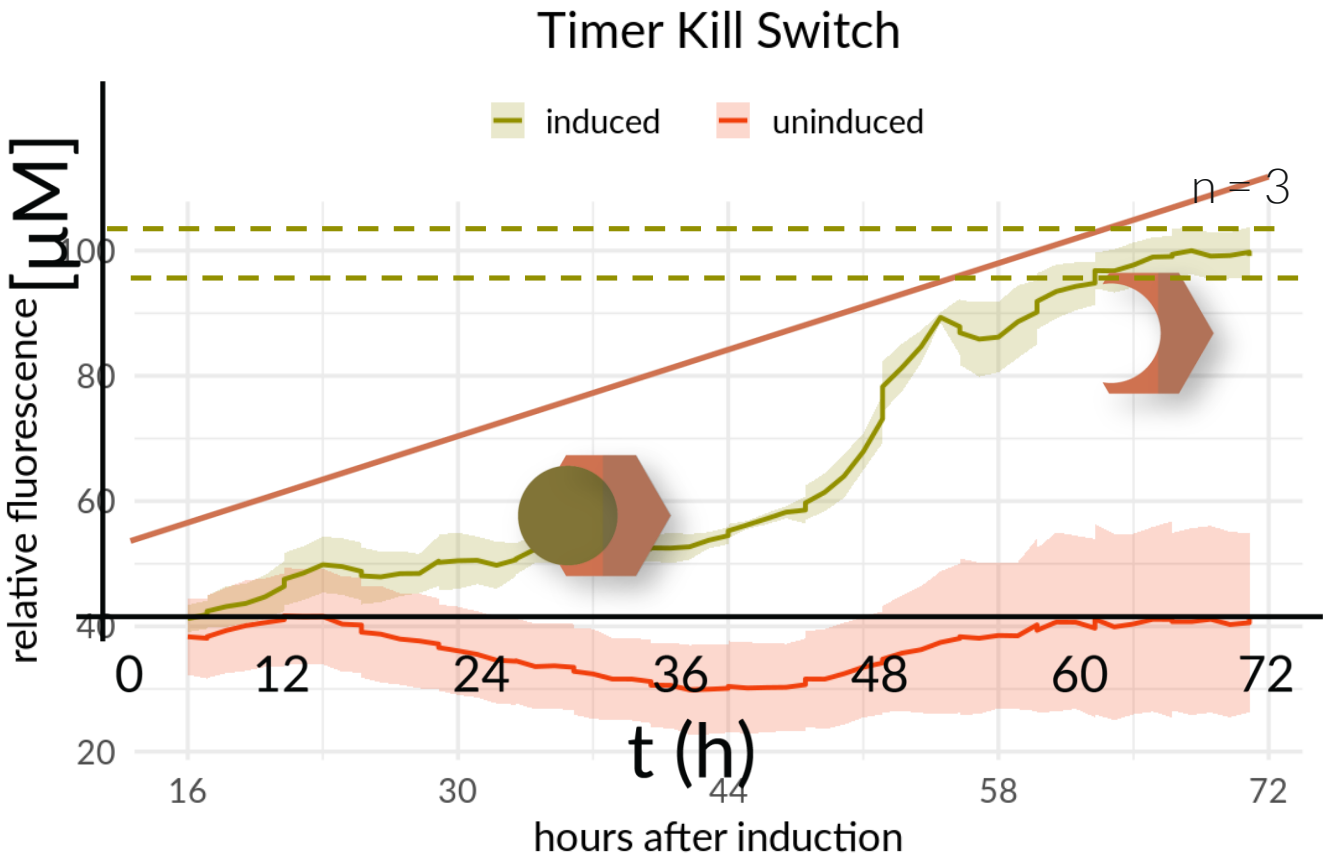


Timer Kill Switch

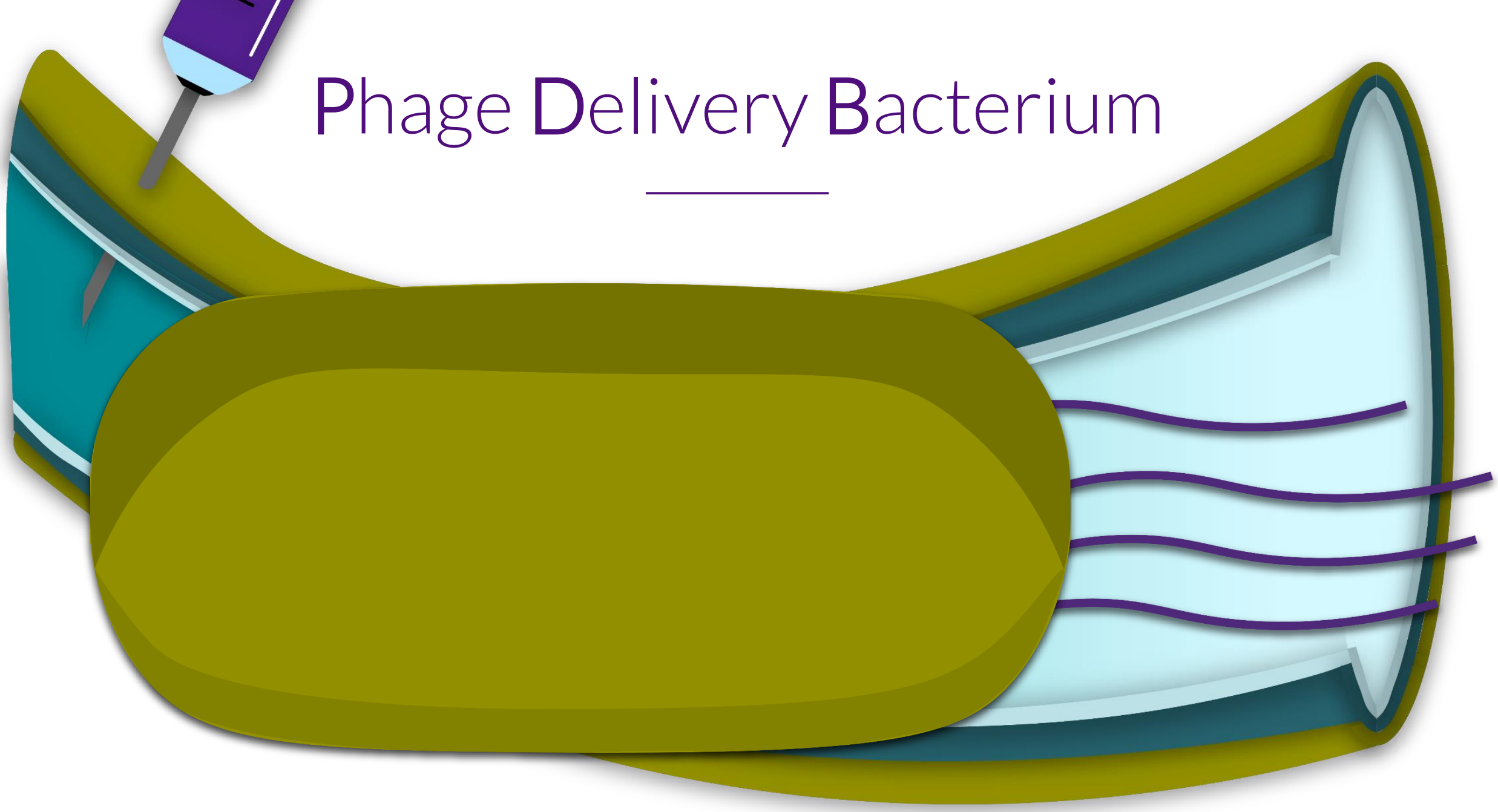
Good solutions need a built in fail-safe mechanism.

Dutch National Institute of Saftey and Environmental health (RIVM)

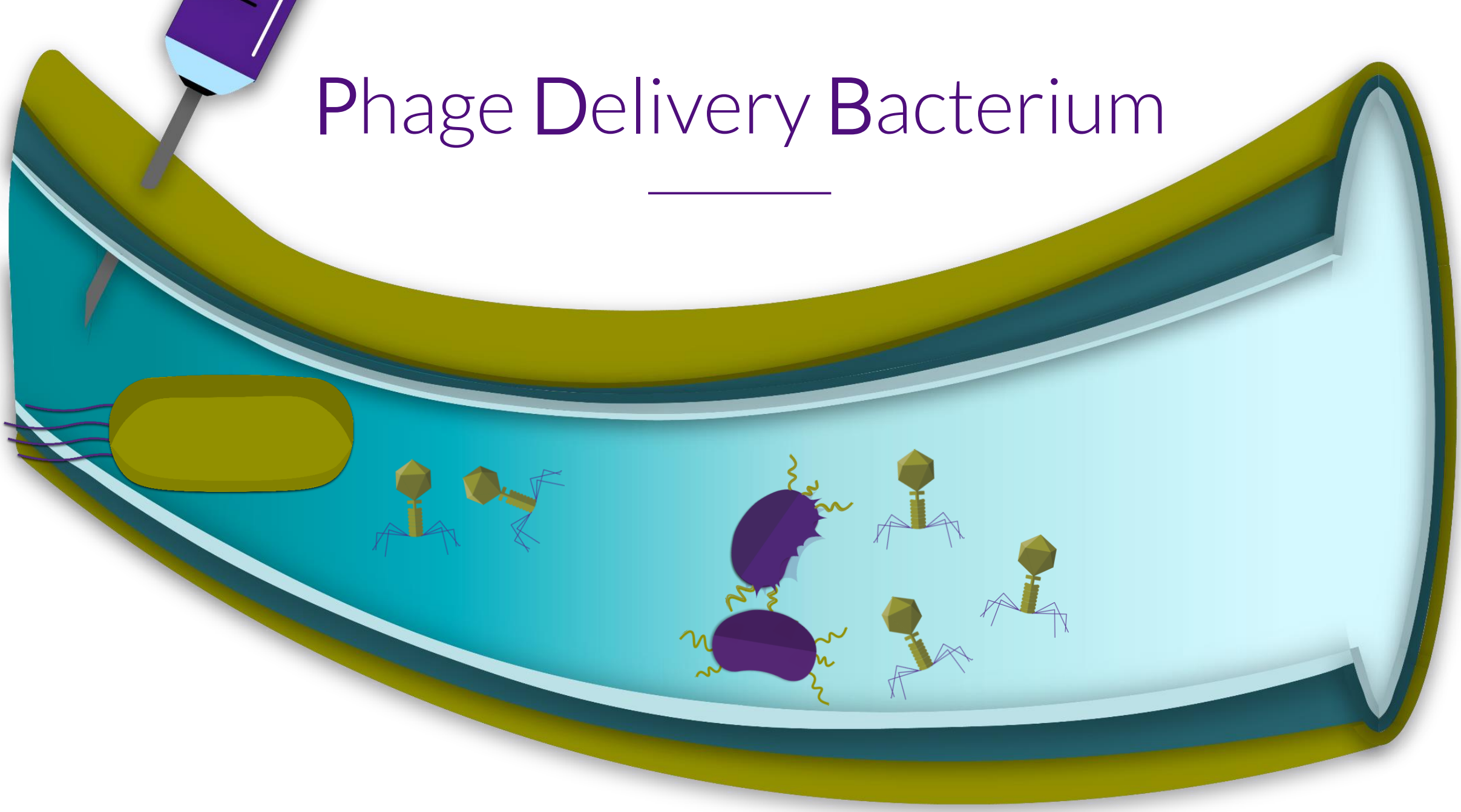




Phage Delivery Bacterium

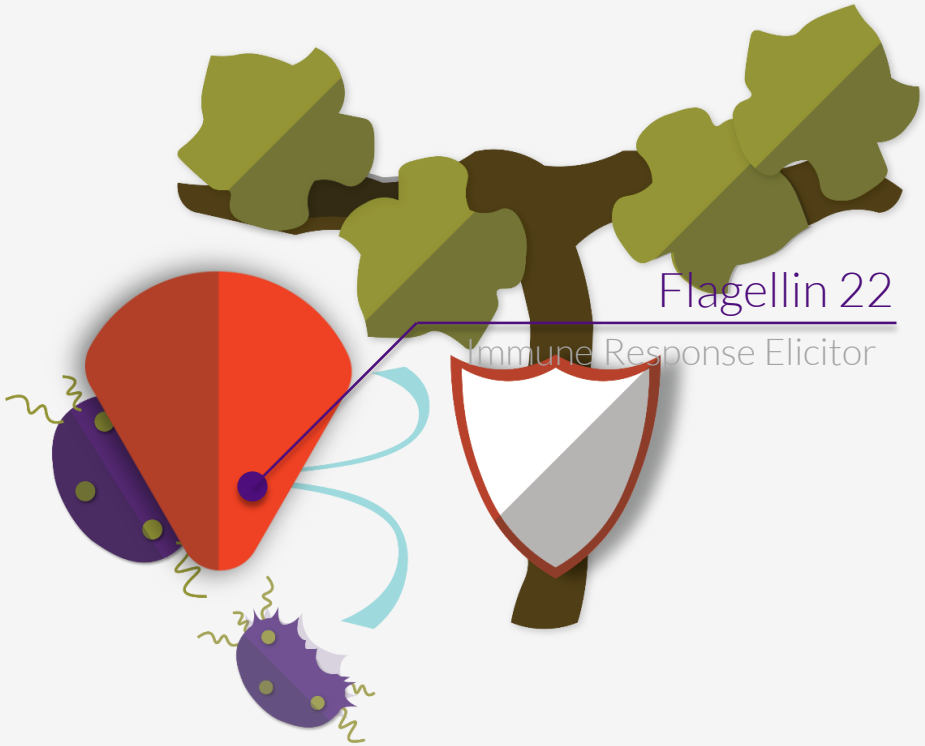


Phage Delivery Bacterium



Immune Activation

Remediation



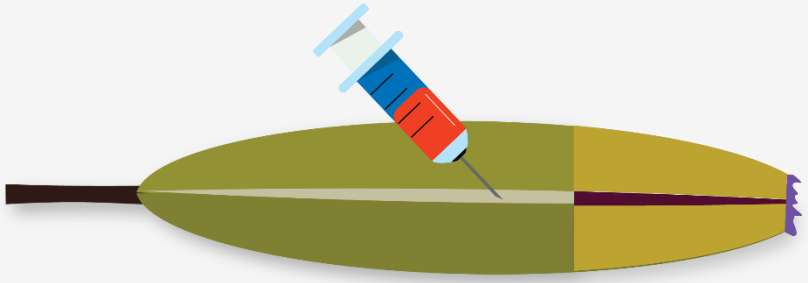
Immune Activation

Flagellin 22

Immune Response Elicitor

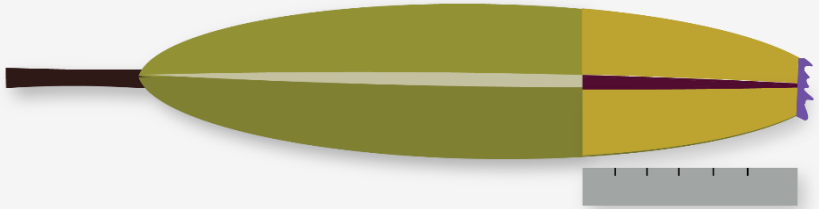
Xanthomonas campestris

Infect

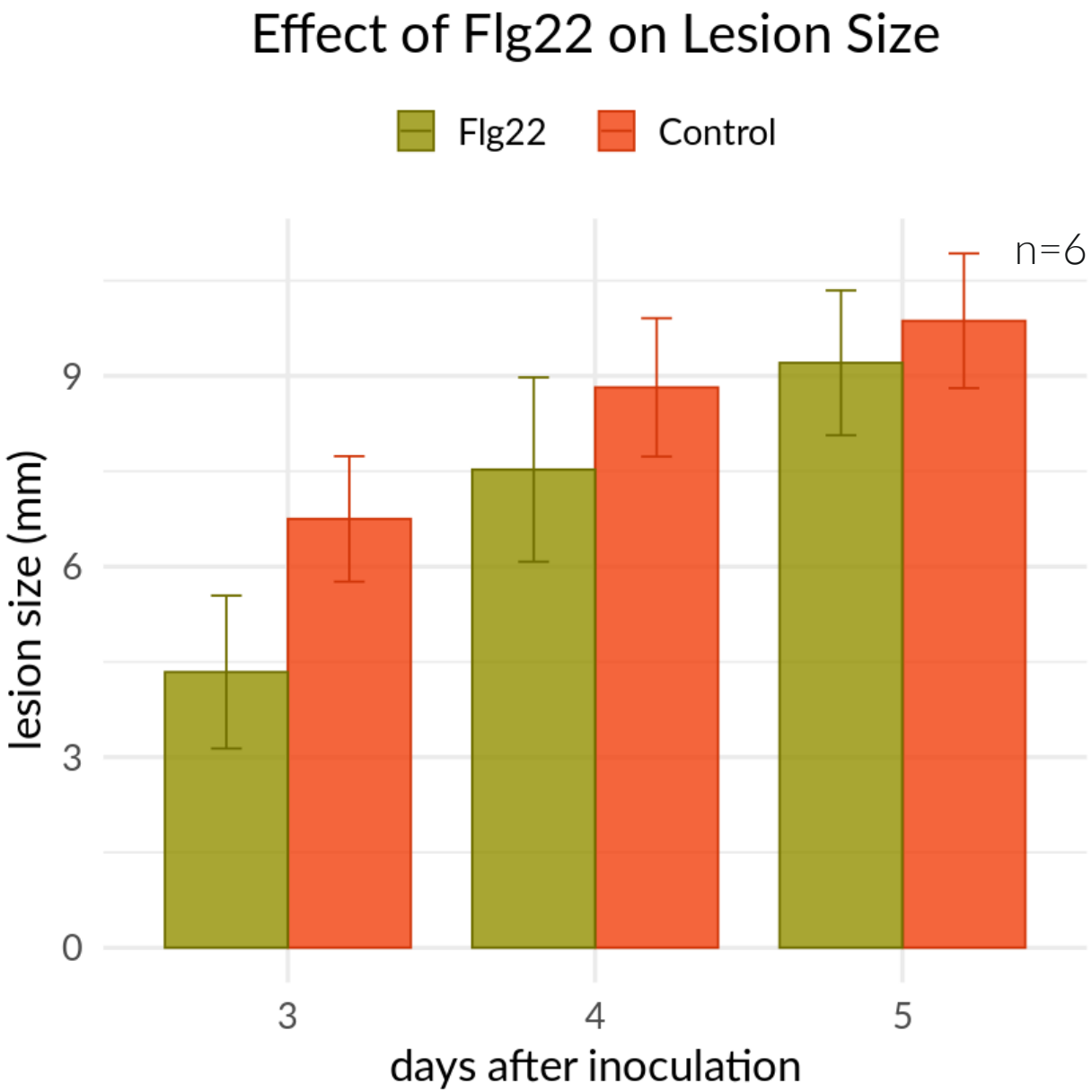


Rescue

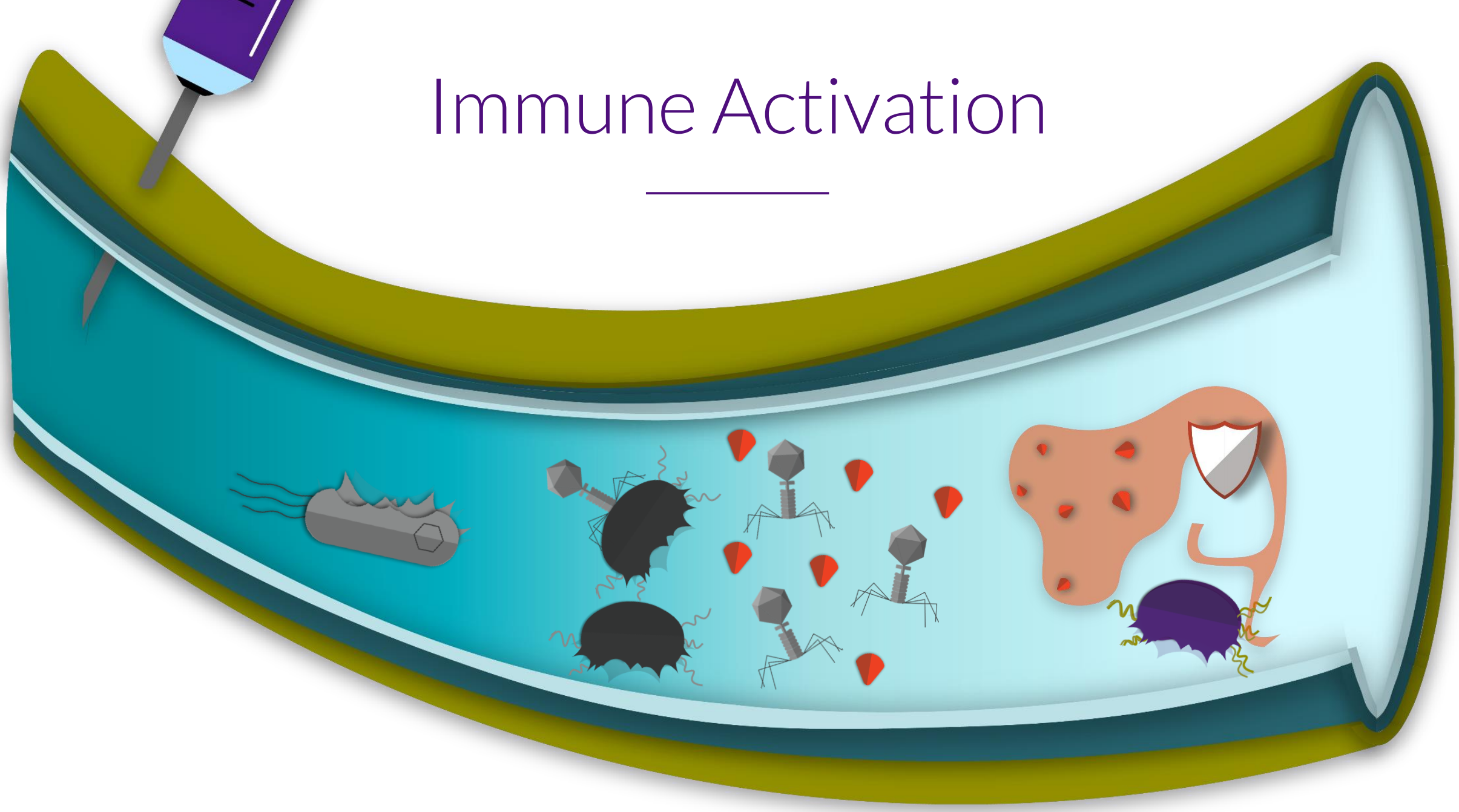
Measure



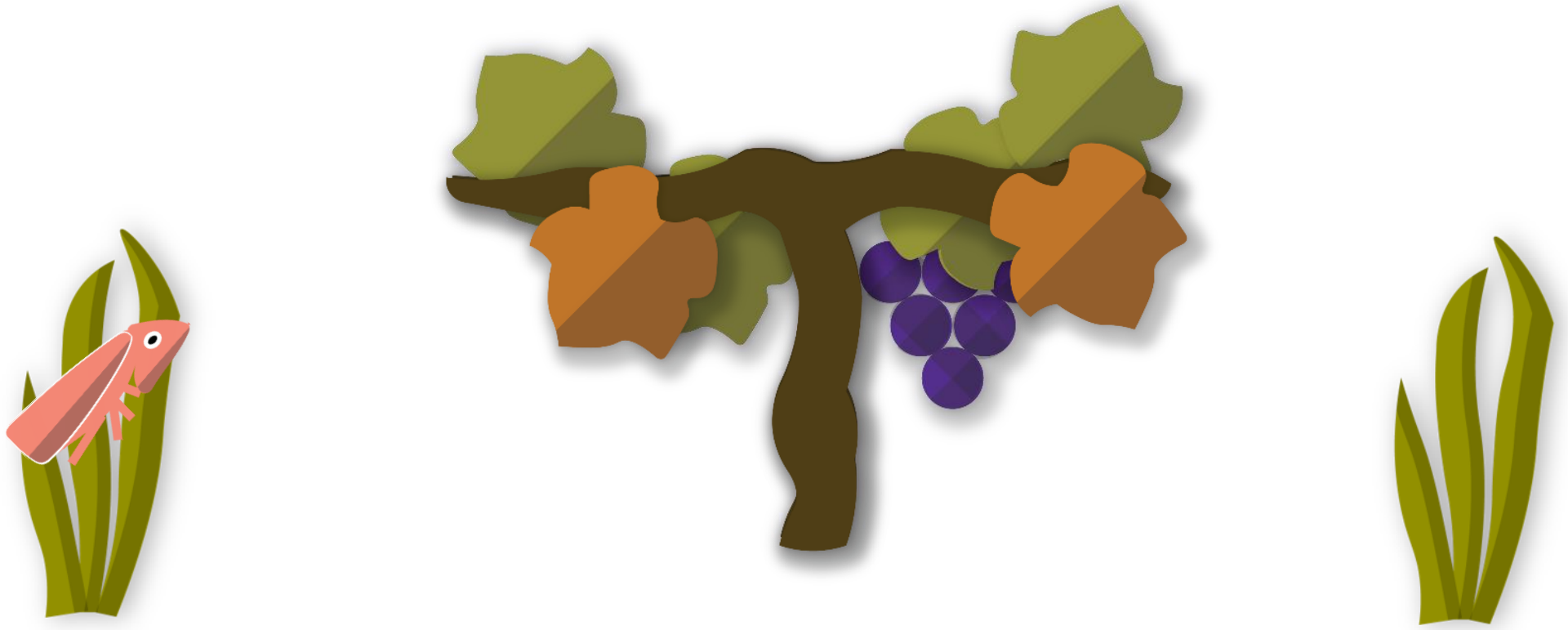
Immune Activation



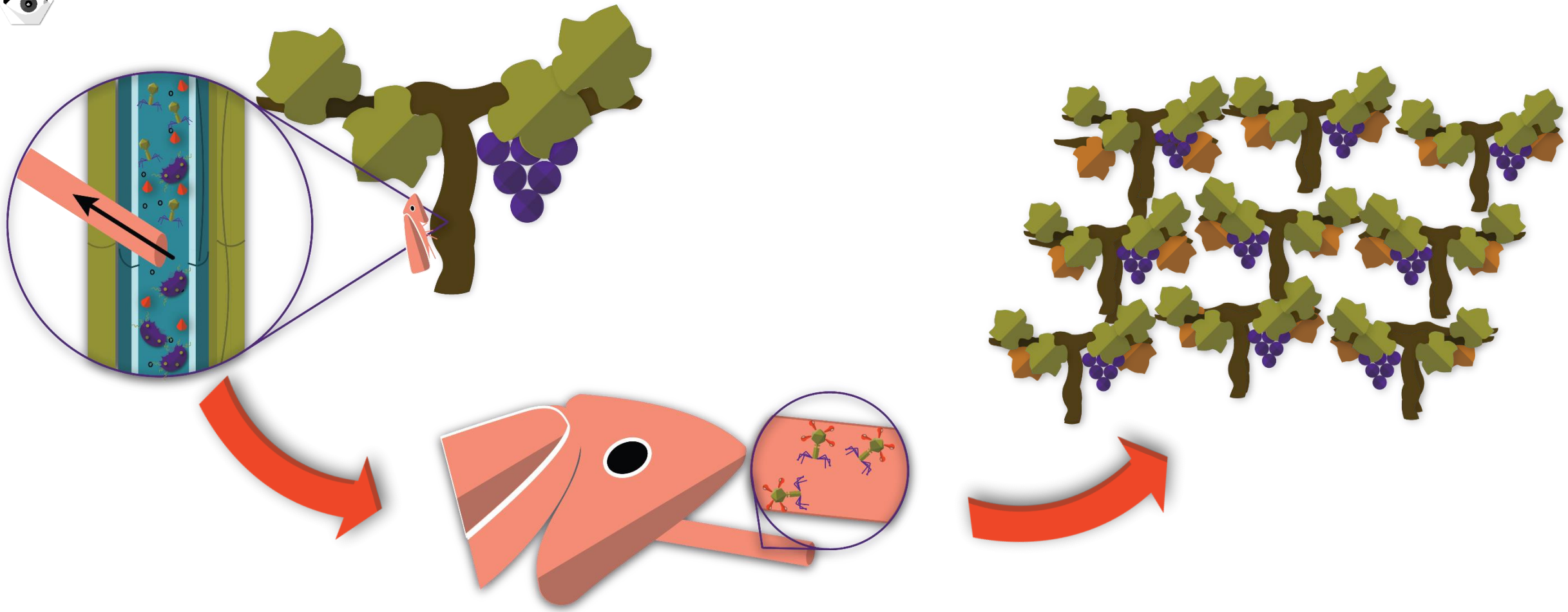
Immune Activation



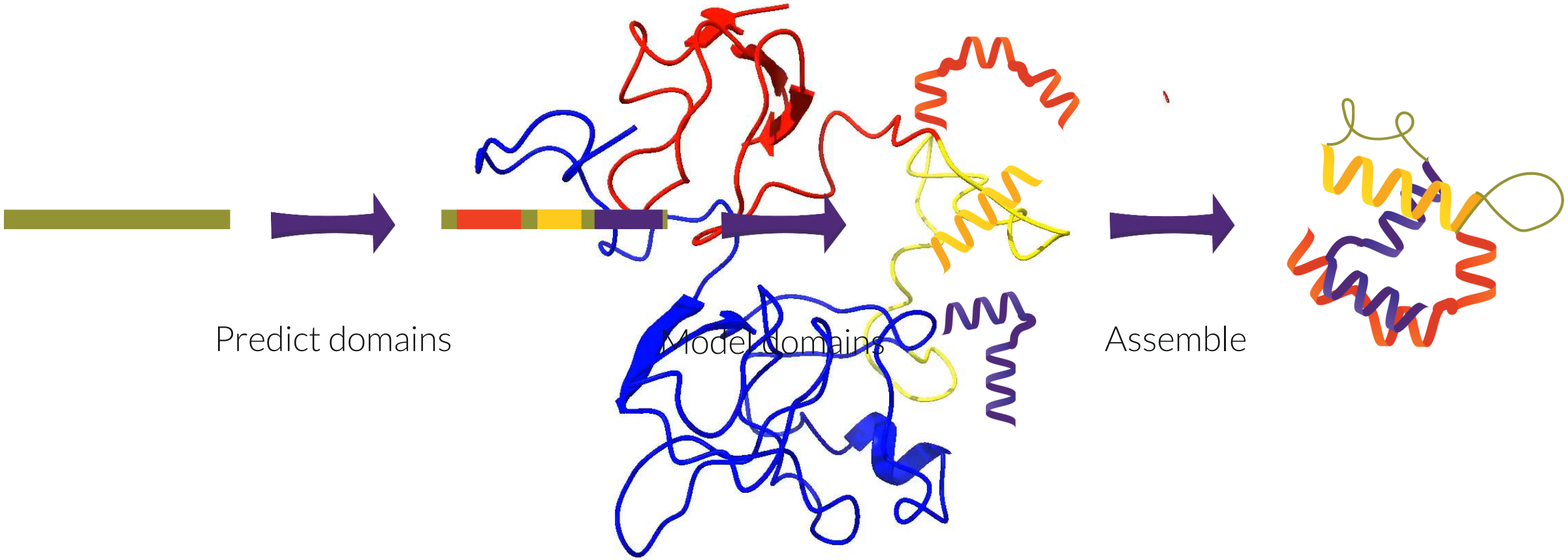
Silent Disease

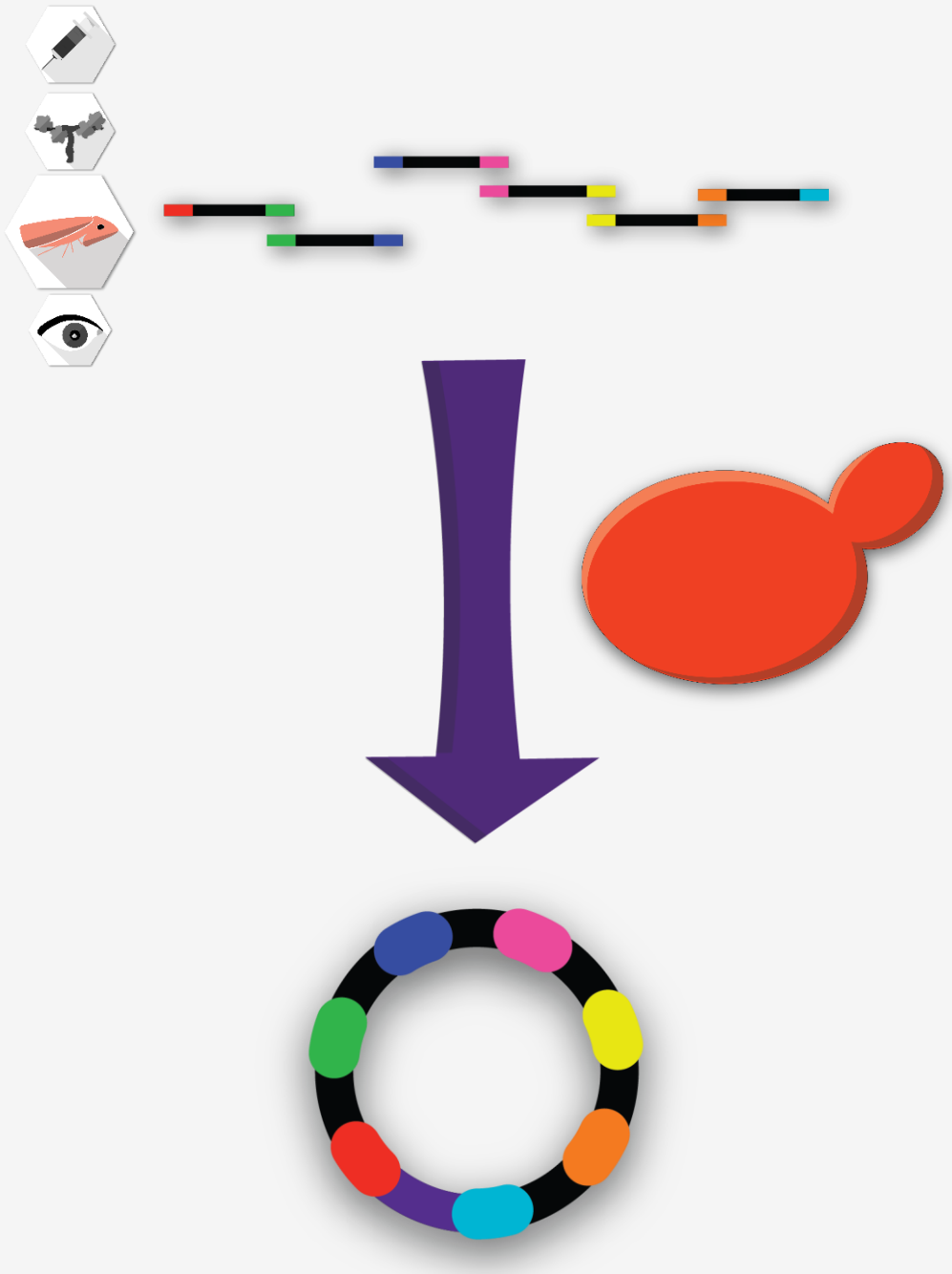


Spread

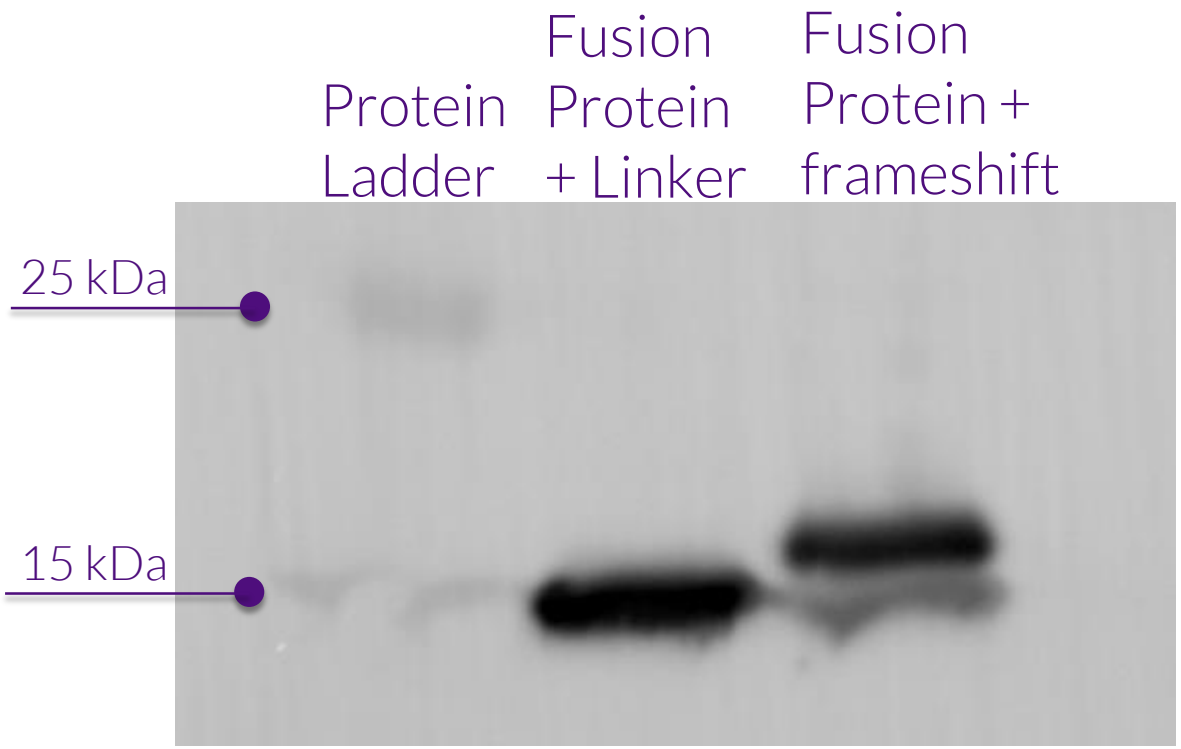


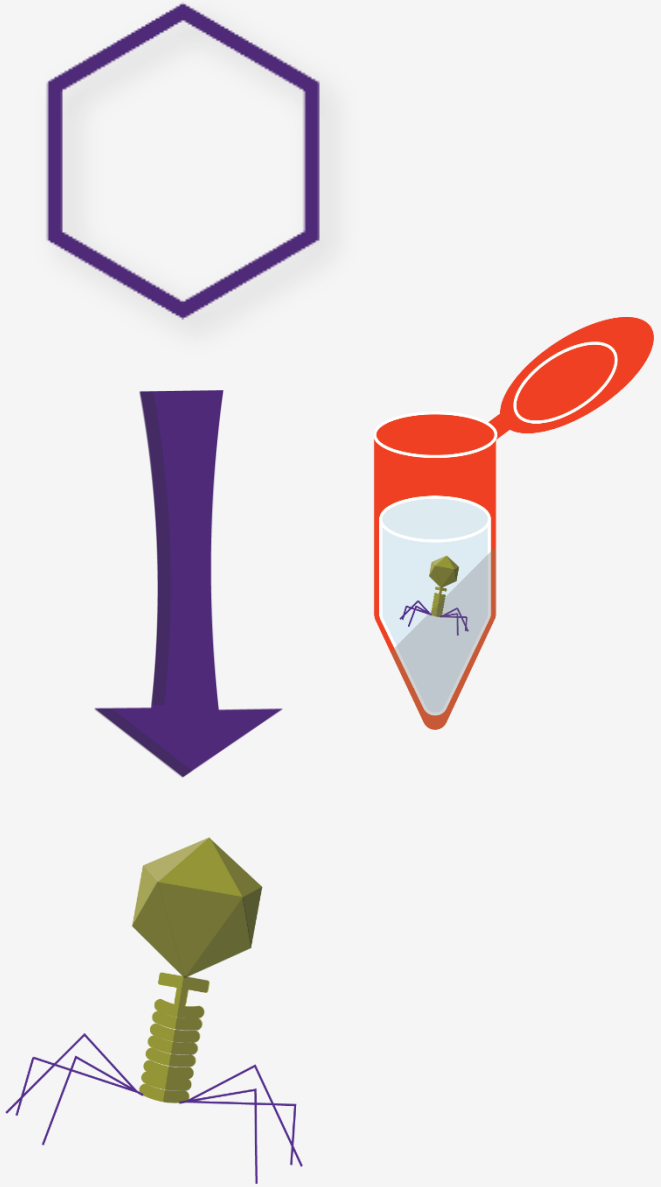
Protein Modeling



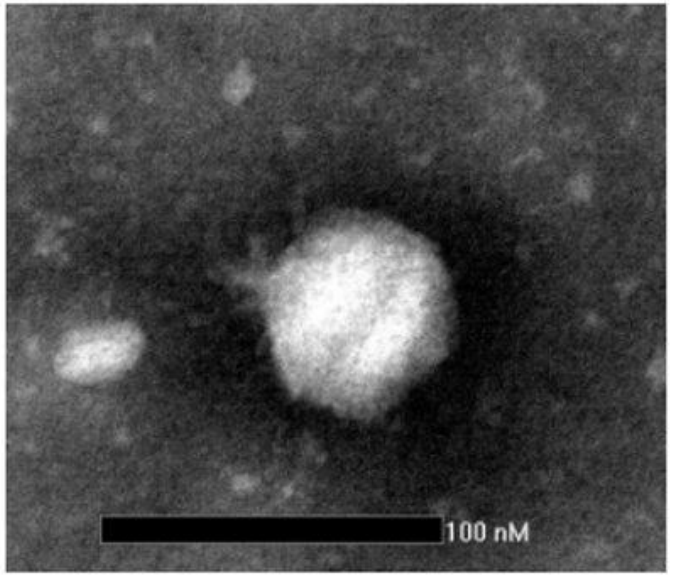


Yeast Recombination

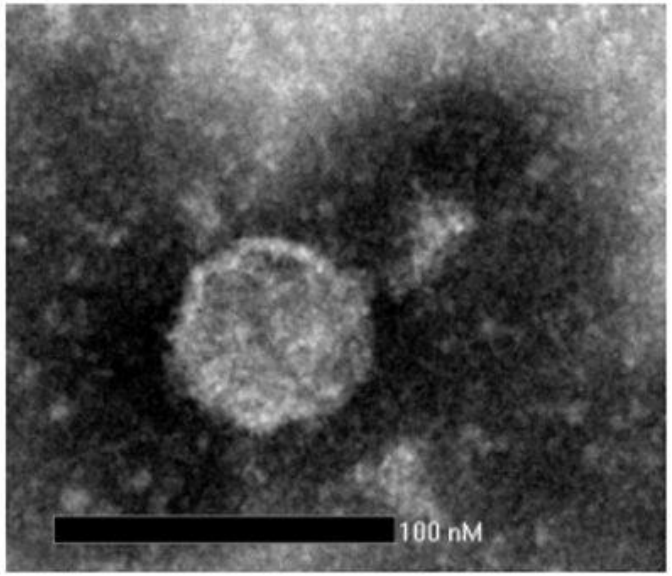




Cell Free

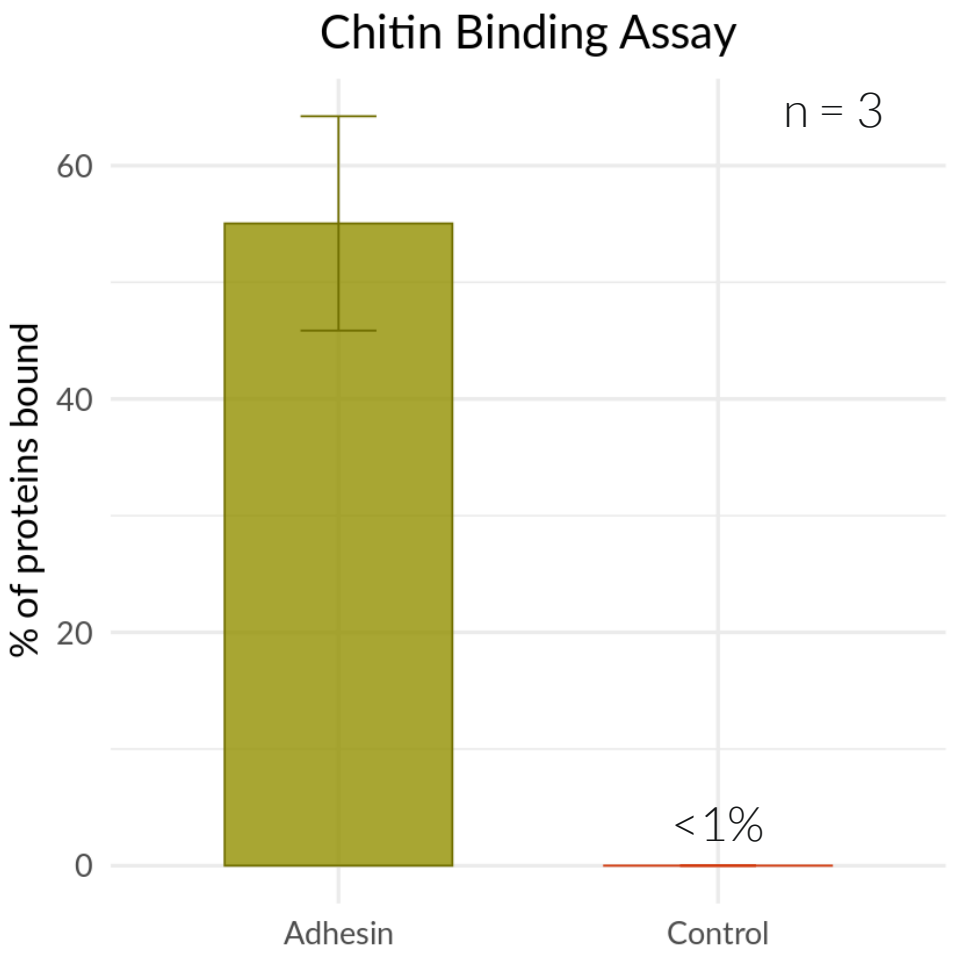


Functional T7 phage



phage Lambda capsid

Chitin Binding Assay



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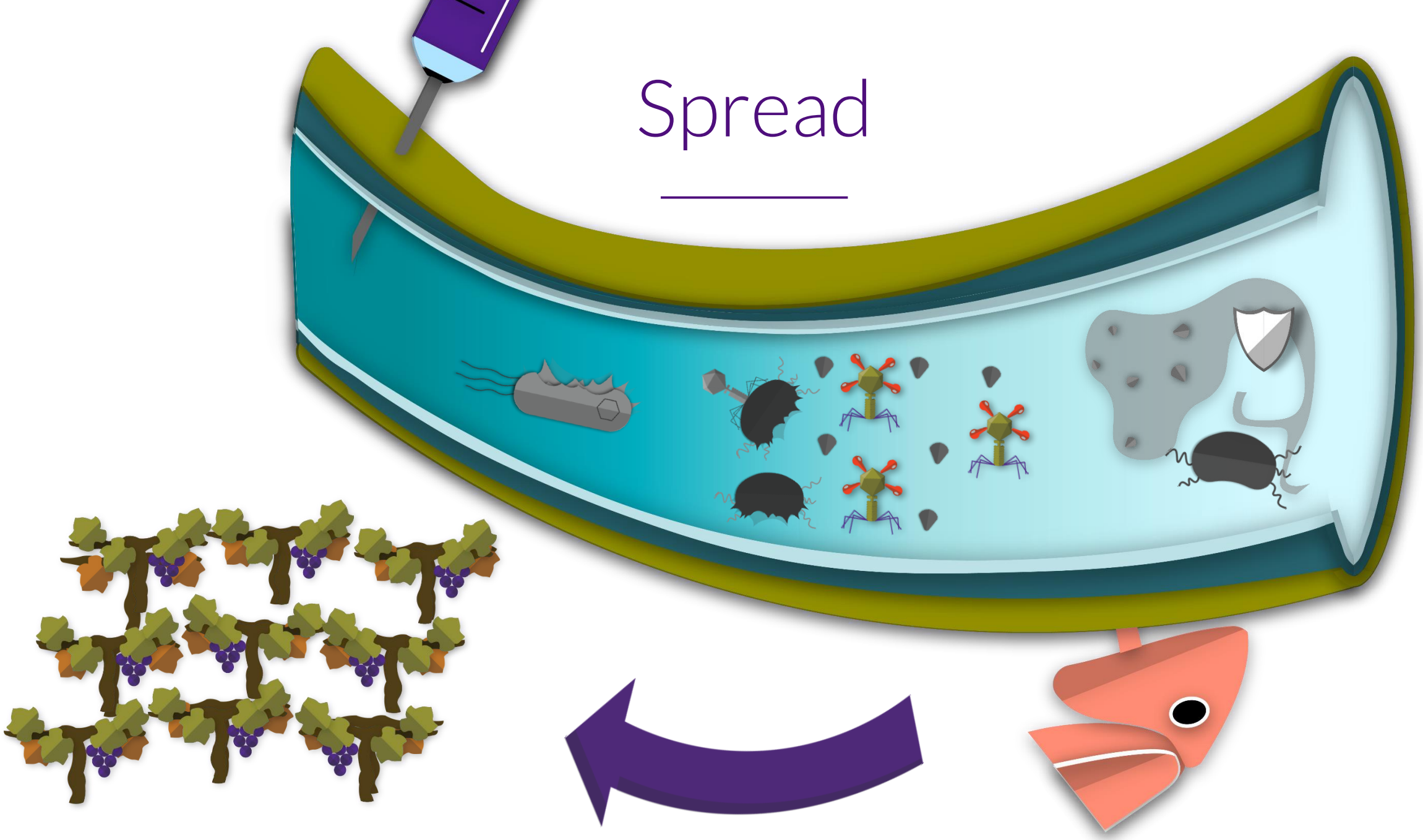
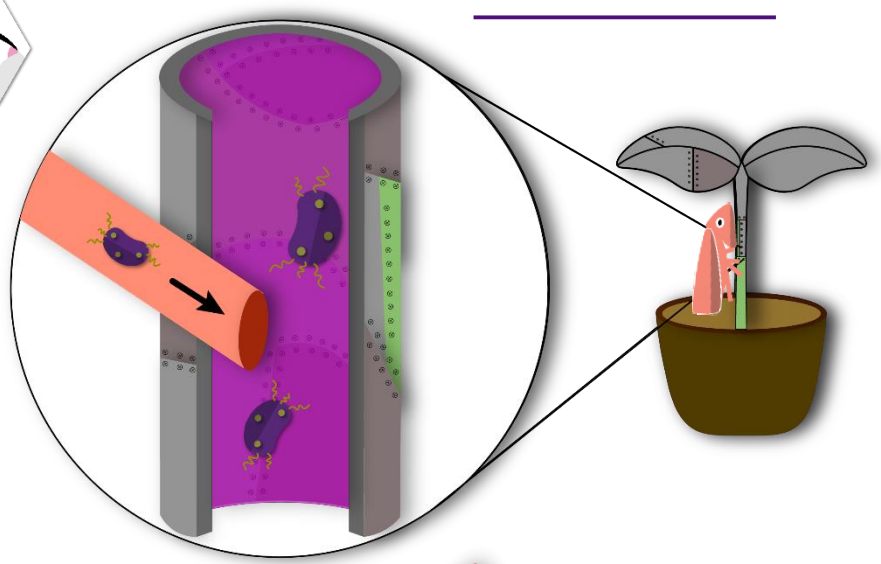
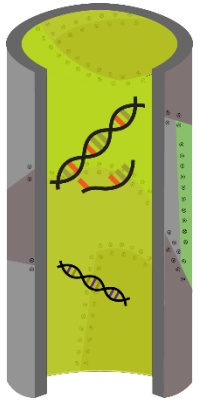
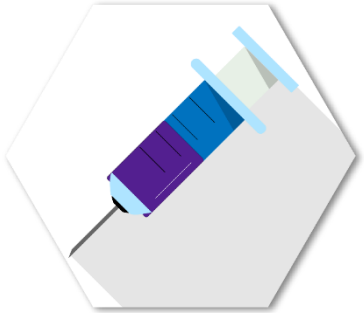


Detection







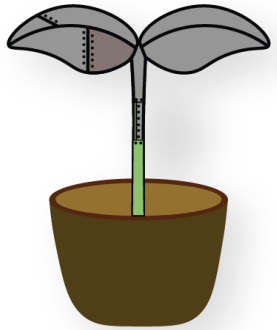
Monitoring of *X. fastidiosa* forms a major bottleneck

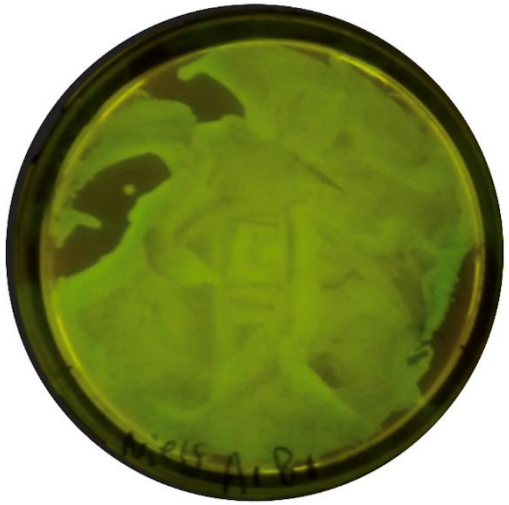
Dr. Martijn Schenk
Policy Maker, Dutch Government

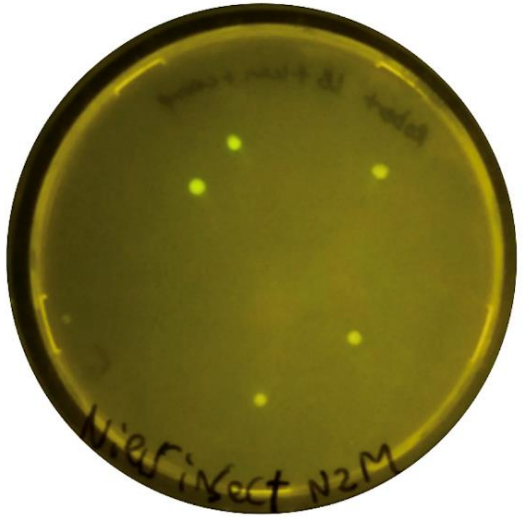
Farmers need a practical solution that saves time

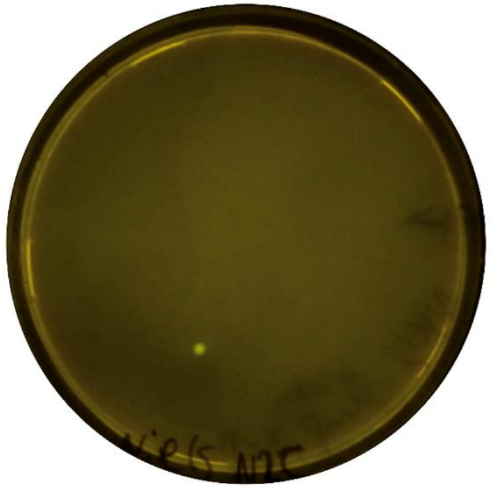
Jan Veltmans
Head Dutch tree farmer organization

Insect Transmission Assay



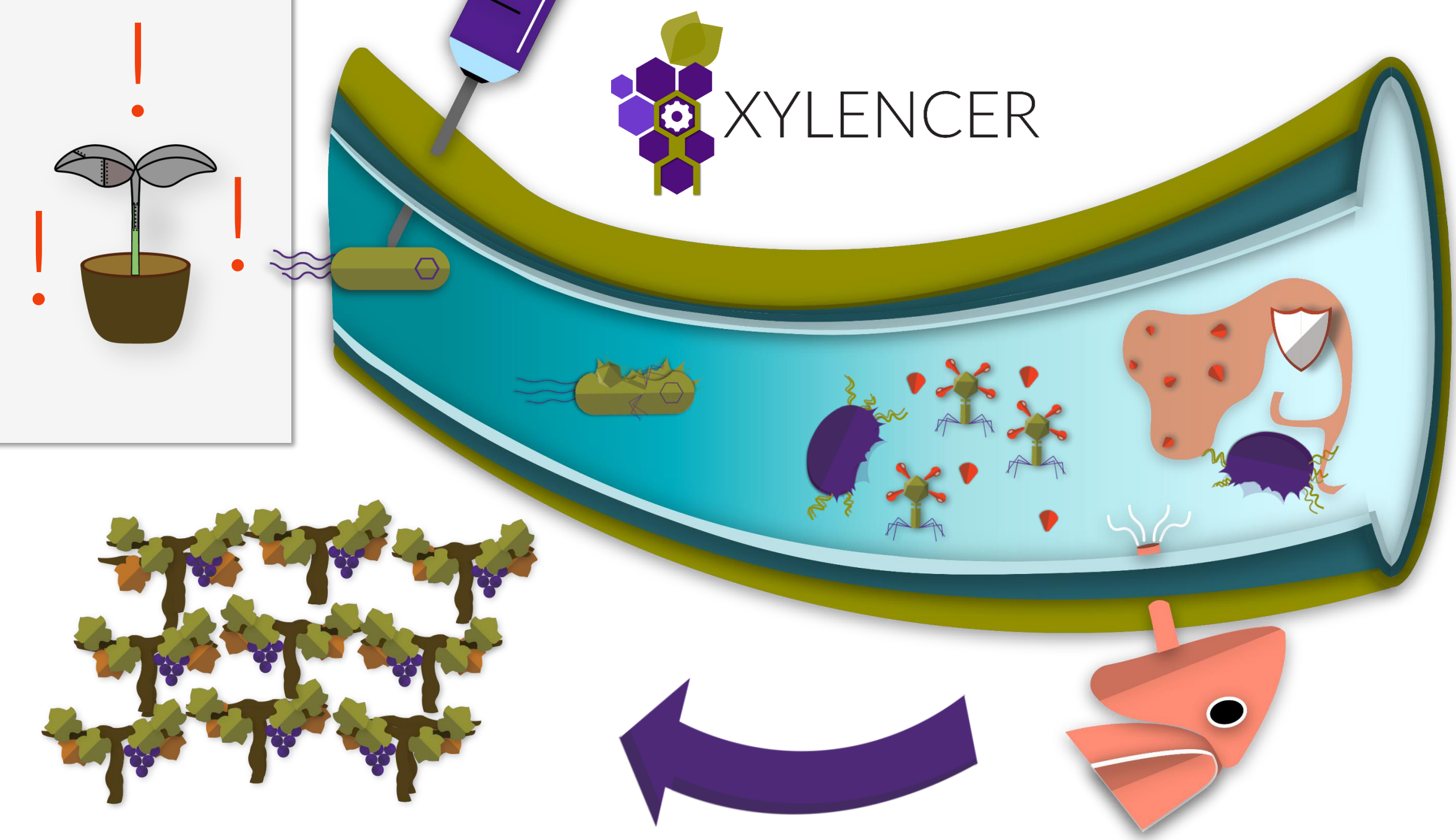






Real-world Detection Test

\+ -


XYLENCER

Spatial Spread Model

00 days

Diseased

Healthy

Dr. Martijn Schenk

Prof. Rene van der Vlugt

Prof. Louise Fresco

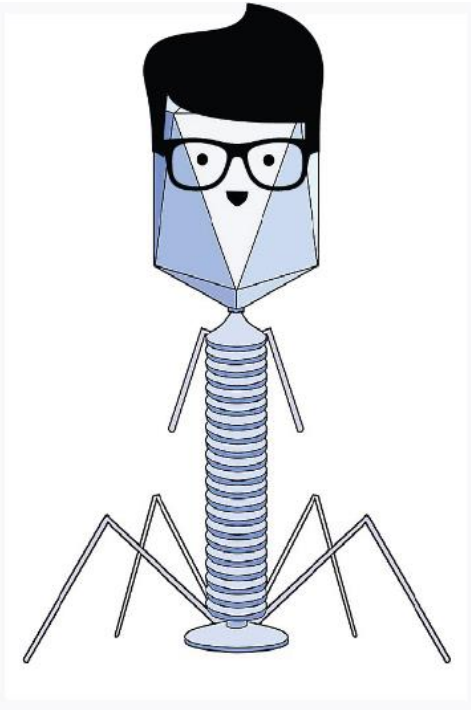
Dick Verduin

Jan Veltmans

Education and Public Engagement

Mensa
The High IQ Society

Outreach and Collaborations

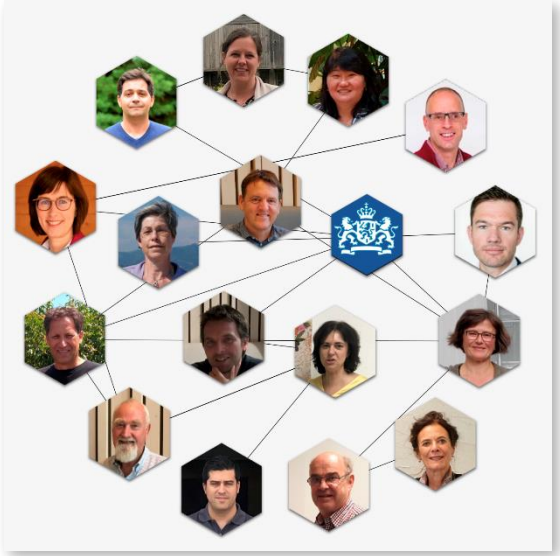


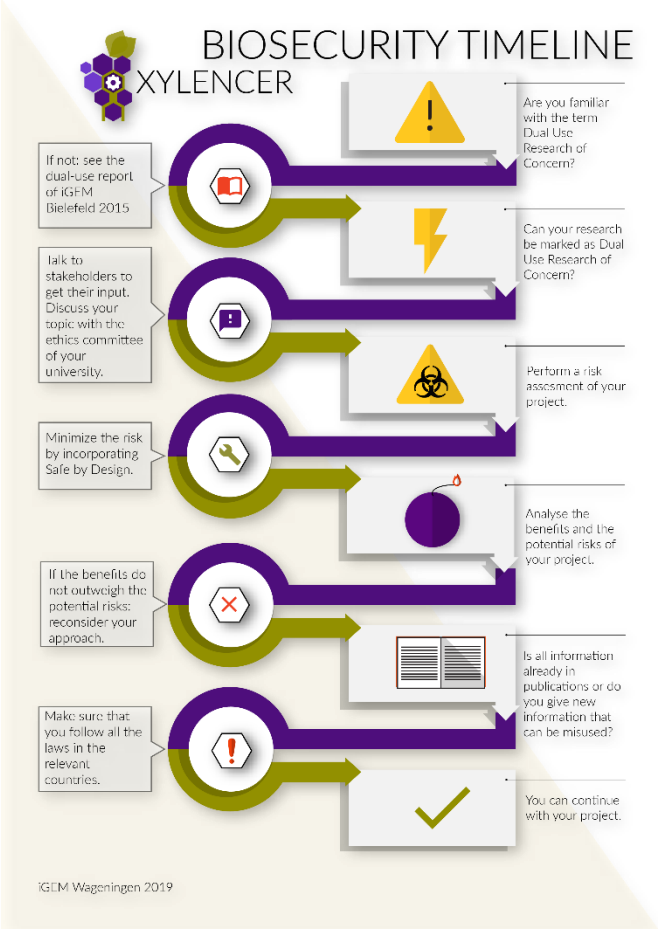
Contributing to the iGEM community

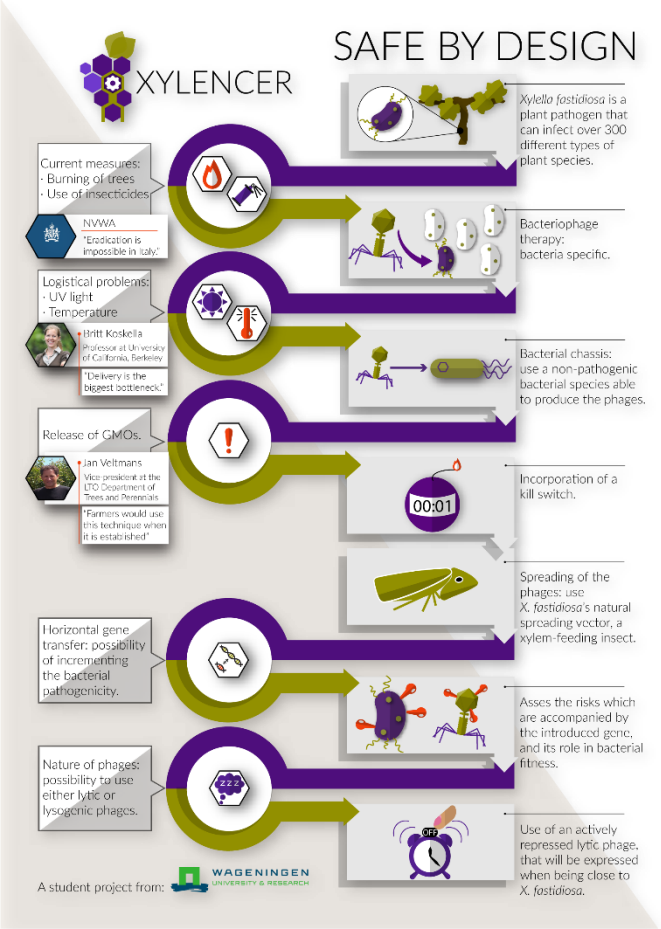
Wiki HTML

At this point you should be able to put you content in the appropriate boxes and they should also already get some wiki specific styling. However to gain more control over how things look, we need to make use of the `class` and `id` attributes. Lets take a look at a simple example:

```
<div>
    <h1>Doinging the things i love.</h1>
    <p>
        Working on the wiki is so cool, i really love it!!
    </p>
</div>
```







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Acknowledgements

iGEM Supervisors
Microbiology
Systems and Synthetic Biology

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- Entomology
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- Biointeractions & Plant Health
- Biosystematics
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- Wasin Poncheewin
- Prof. Louise Fresco
- Dr. Raoul Bino
- Dr. Ernst van der Ende
- Dr. Anouk Geelen
- All stakeholders
- Crowdfunders

www.patriciakuehfuss.com for providing us with the beautiful picture of Mario