



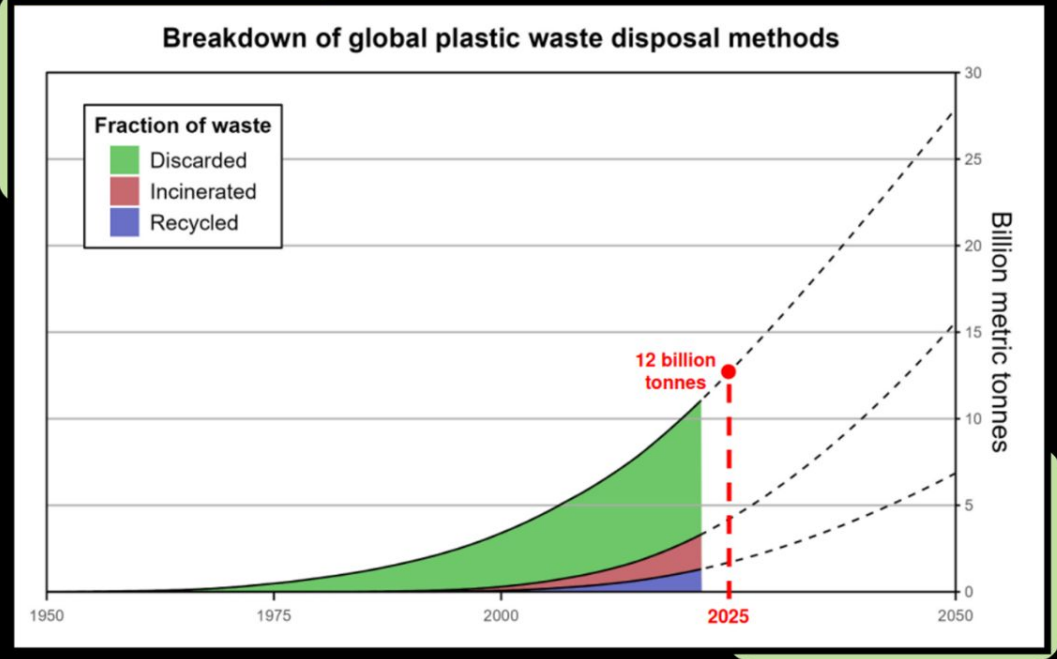
PetaBite

Delivering Tailored Microplastic
Degradation Solutions



Plastics are
everywhere.

**≈ 400 Million
Tonnes
Produced
Each year.**



The Economic Burden

≈\$19B

In Annual
Losses



Food Security

*Crop yield and supply chain
disruption*



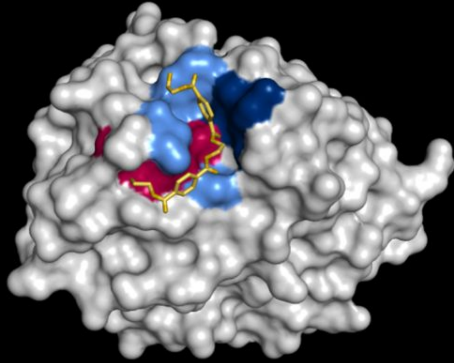
Public Health

Toxin exposure and contamination



Environmental Cleanup

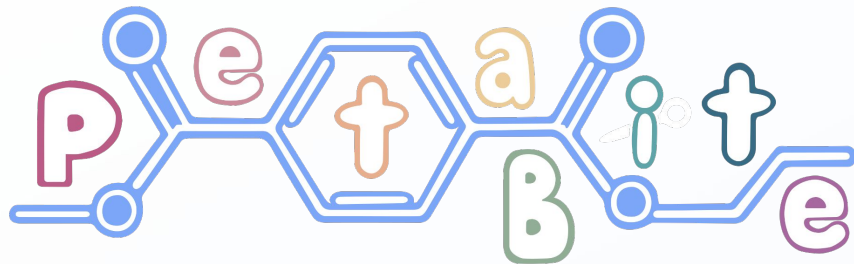
Remediation costs and ecosystem degradation



3D PETase Model

Solution:

Engineered
Plastic-Degrading
Enzymes (PETases)



Our North Star Goal

"Create a full-stack workflow that can design highly efficient plastic-degrading enzymes for **any condition."**

PetaBite PETase Verticals of Deployment

01

Waste-water Treatment Plants

PETase deployed in clarifiers to break down concentrated PET in biosolid sludge. *Use-case validated with WWTP operators and research specialists.*

02

Textile Pellet Bioremediation

Targets PET pellets released in textile processing before they enter waterways.

03

Filtration

Breaks down PET microfibers shed during washing to reduce household discharge.

04

Landfill Leachate Bioremediation

Degrades PET in leachate streams, reducing climate pollution from landfills. *Use-case validated with research specialists.*

05

Degreasers

Breaks down PET trapped in oily industrial waste streams.

Timeline + Relevant Market



PET recycling
TAM: \$17.2B



**Wastewater
and Water
recycling**
TAM: \$10.1B



**Multi-polymer
recycling:**
TAM: \$45.1B

Short-Term Objective:

*Degrading **PET microplastics** at **scale**.*

Long-Term Objective:

*Degrade every **major plastic** at **scale***

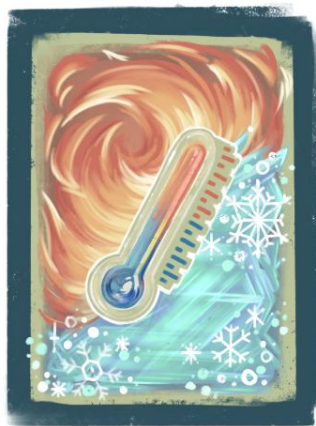
Appendix

Current PETase have 3 Key Limitations

Enzymes are strictly constrained by narrow lab conditions, blocking real-world deployment

1. Thermal Instability

Wild-type PETases (e.g., *IsPETase*) rapidly denature and lose catalytic activity at elevated temperatures.



2. Very pH Sensitive

Enzymatic activity drops drastically outside a narrow pH range.

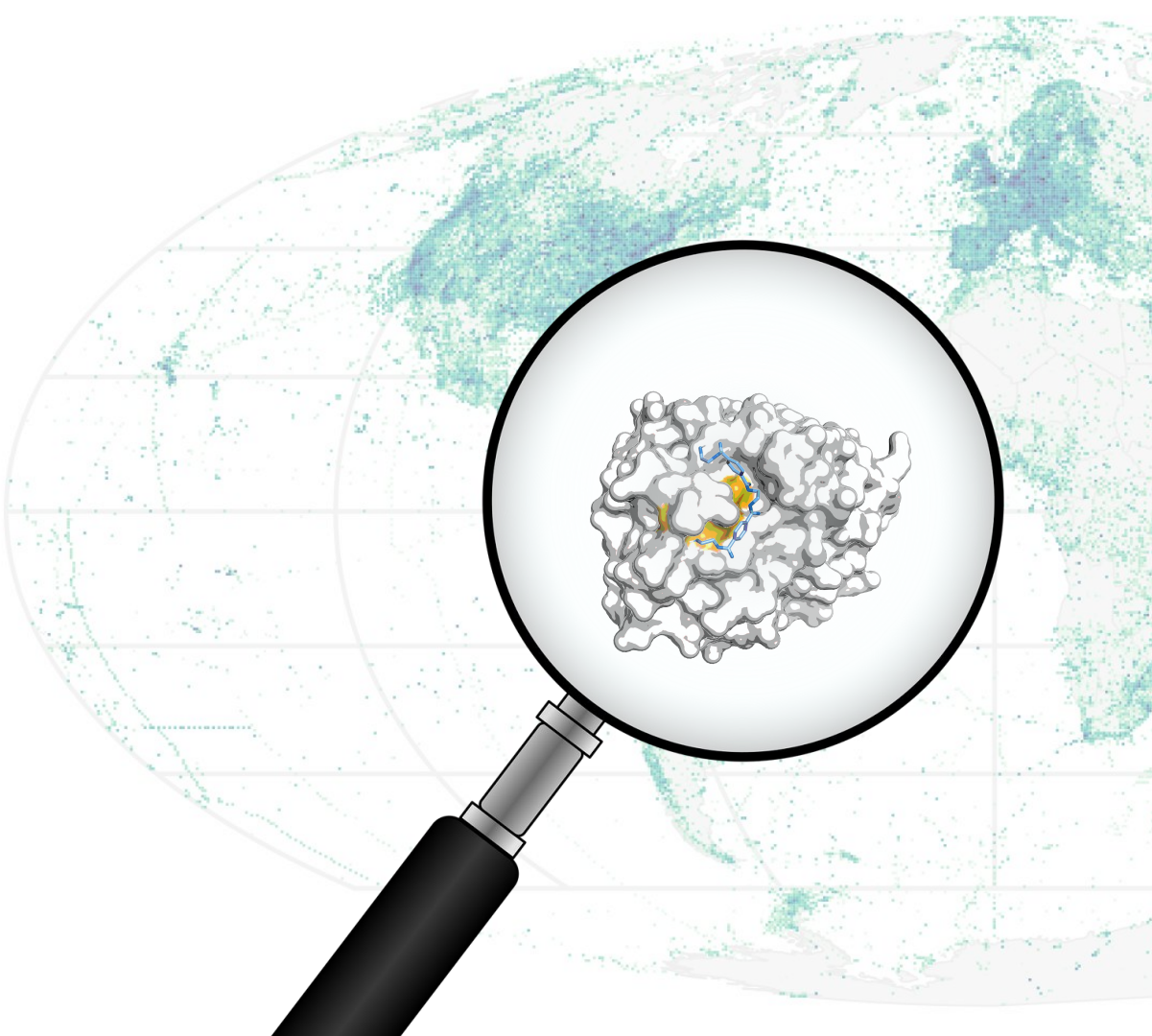


3. Hard to Scale

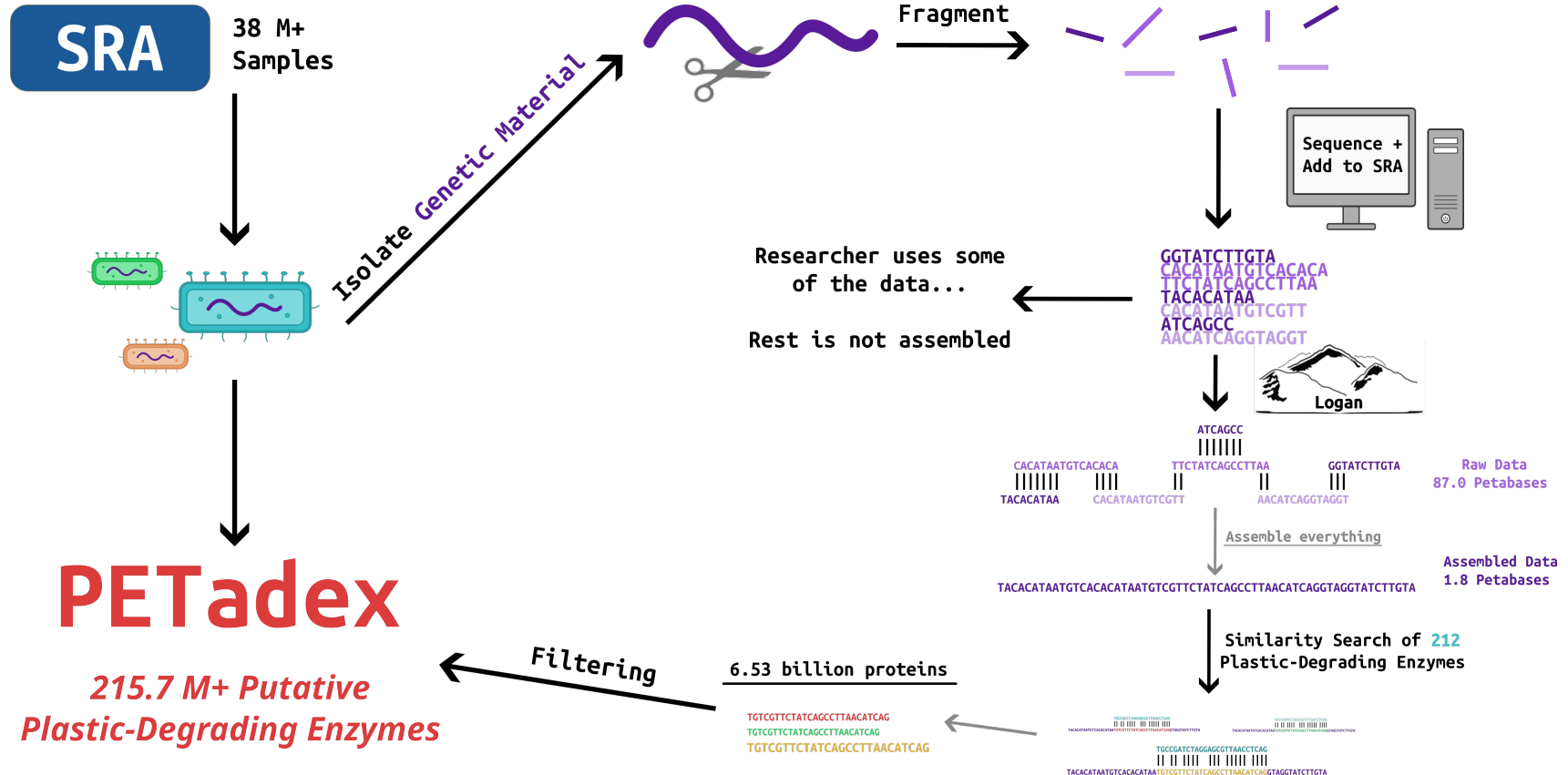
Variable conditions make it difficult to scale to industrial plants.



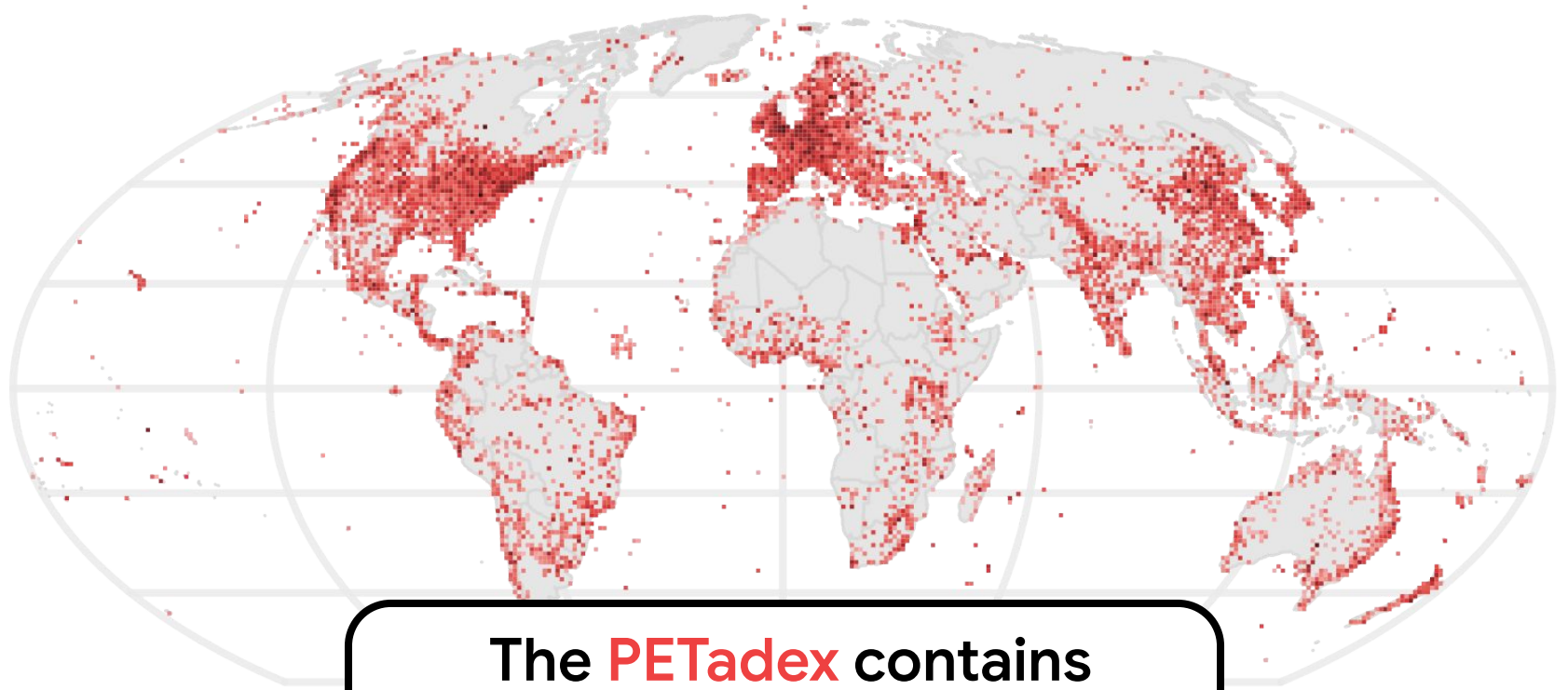
Global Plastic Degrading Enzyme Discovery



Searching the SRA for plastic-degrading enzymes



The **PETadex** database spans the globe



The **PETadex** contains
215.7M enzymes from
6.8M samples

The Enzyme Discovery Toolkit **petadex.net**



Our Bioreactor System

