

KONUR ERU LÍKA
Í SJÁVARÚTVEGI




Hemp-derived polyhydroxyalkanoate bioplastics: a sustainable and biodegradable alternative

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á Akureyri
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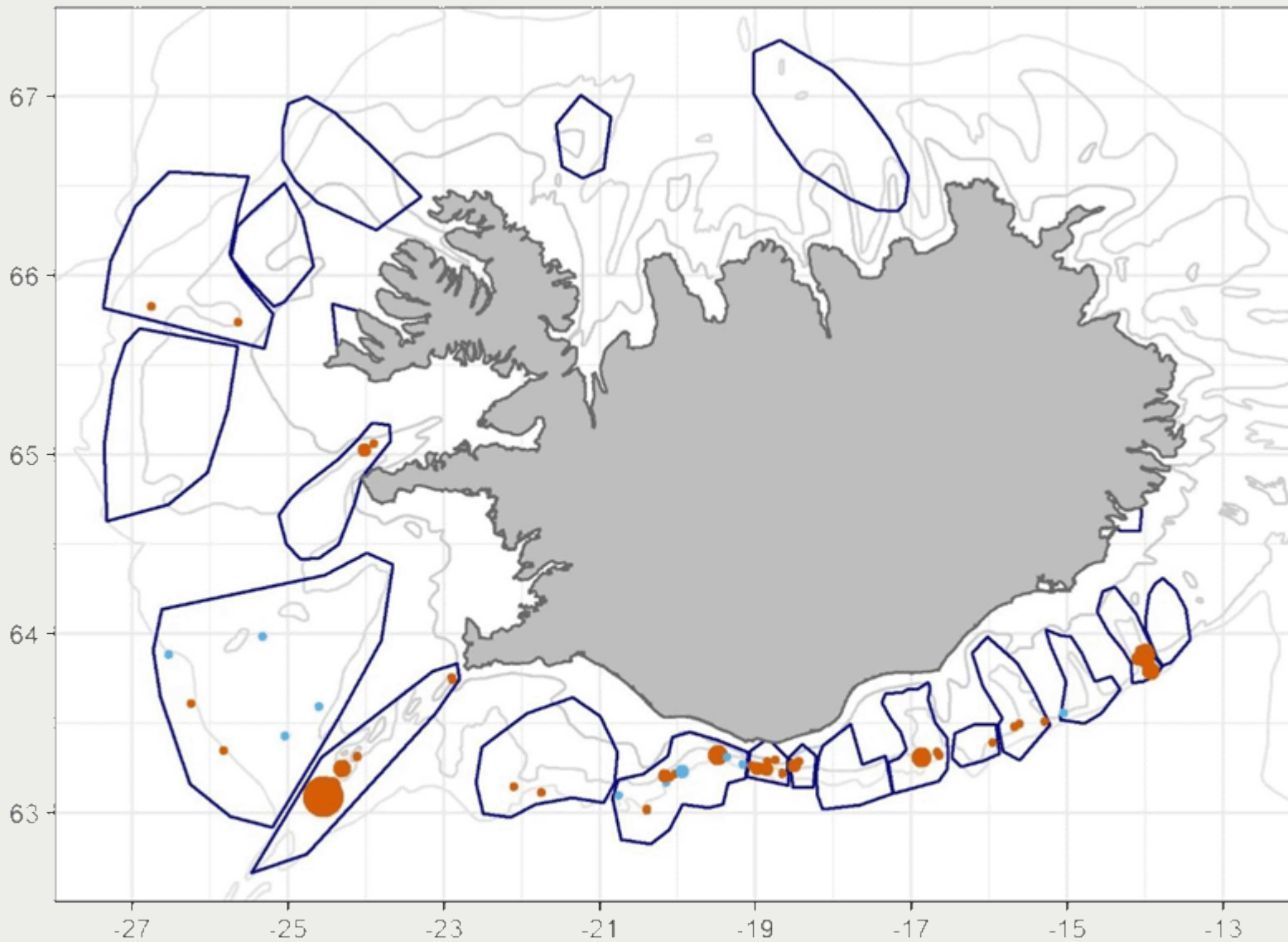
A photograph showing a person in a small wooden boat on a body of water. The person is wearing a blue striped shirt and is using a long pole to navigate. The water is dark and reflects the light. To the right of the boat, the shoreline is heavily littered with a large amount of plastic waste, including bags, bottles, and other debris. The text is overlaid on the water area.

**>230 Million tons of
plastic produced per year**

<8% is recycled



45 million kg
plastic enter
the ocean each year
from lost fishing gear



Tegund af rusli

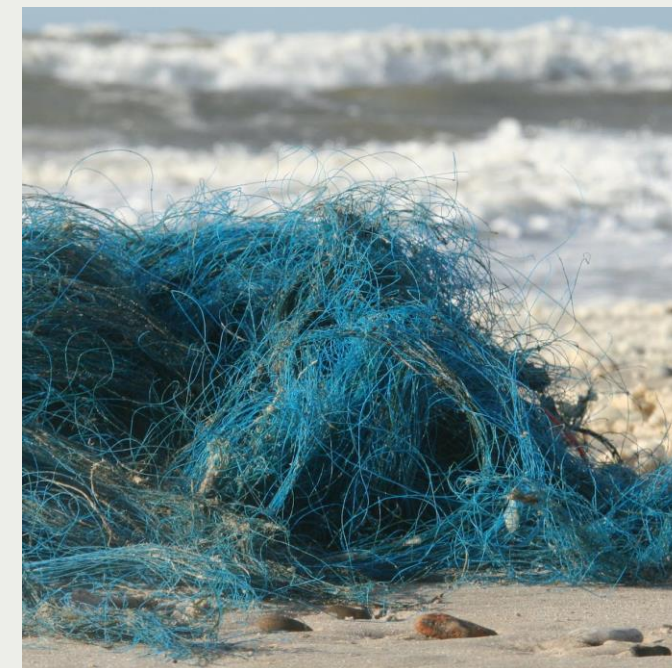
• FISKVEIÐIBÚNAÐUR
(Fishing-related trash)

• ALMENNT RUSL
(Other trash)

Fjöldi

• 1 • 10 • 20 • 40

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How do we design products that are ...

Fit for purpose

AND

Bio-based

AND

Sustainable

AND

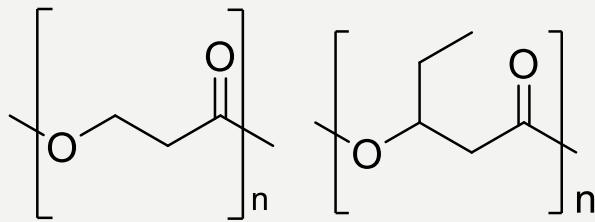
Cost-effective
Biodegradable
Safe
Reusable



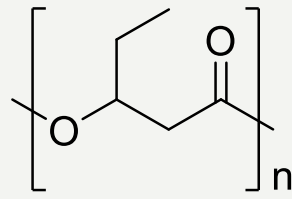
Yes, I know this runs off the slide...
(it's a joke)



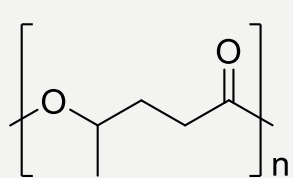
The Polyhydroxyalkanoates Family of Bioplastics



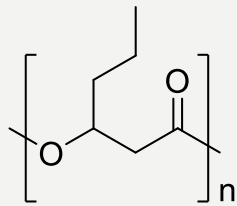
PHB



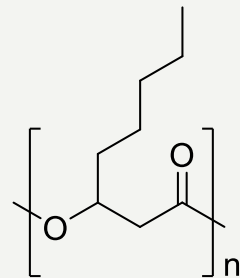
P3HV



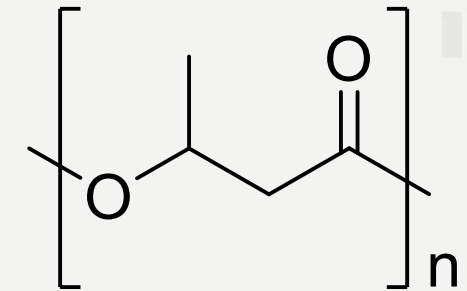
P4HV



P3HH



P3HO



Poly 3-hydroxybutyrate
(P3HB or PHB)

PHA Products

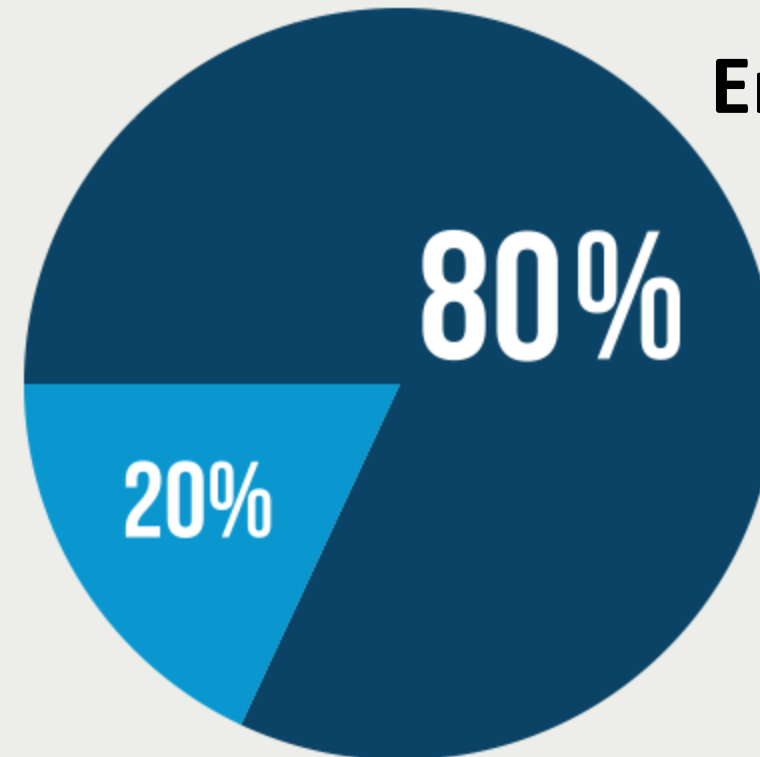


PHA bottle biodegradation, type Biopol™, by incubation in mud for 80 days (Sudesh et al., 2000)



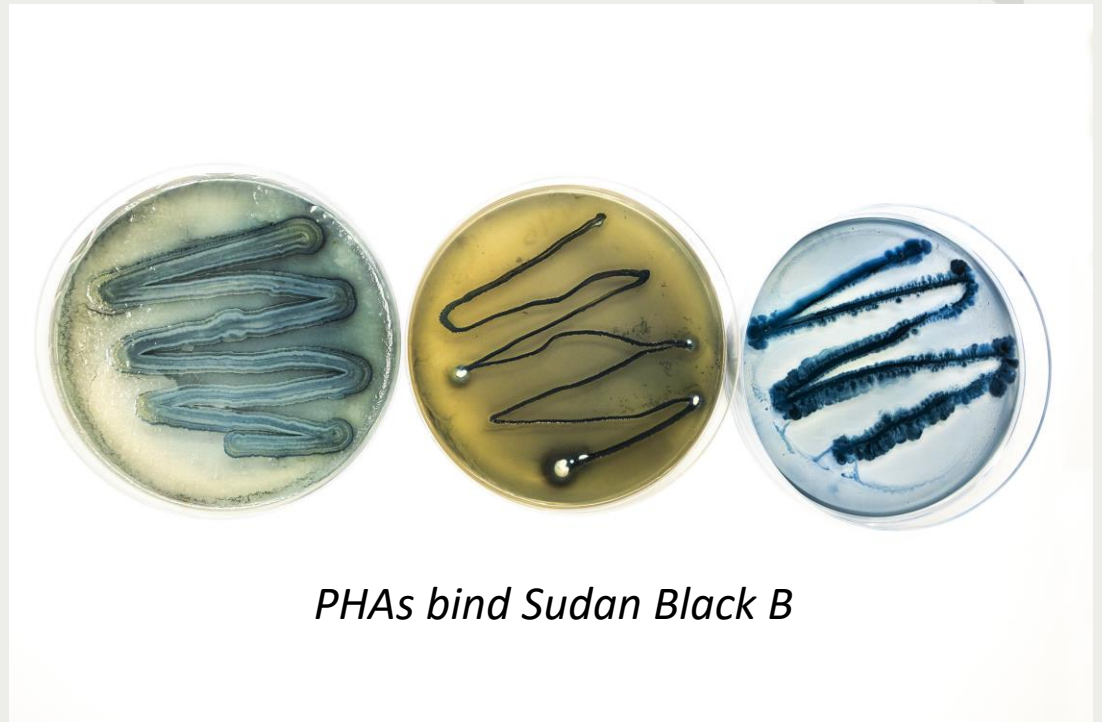
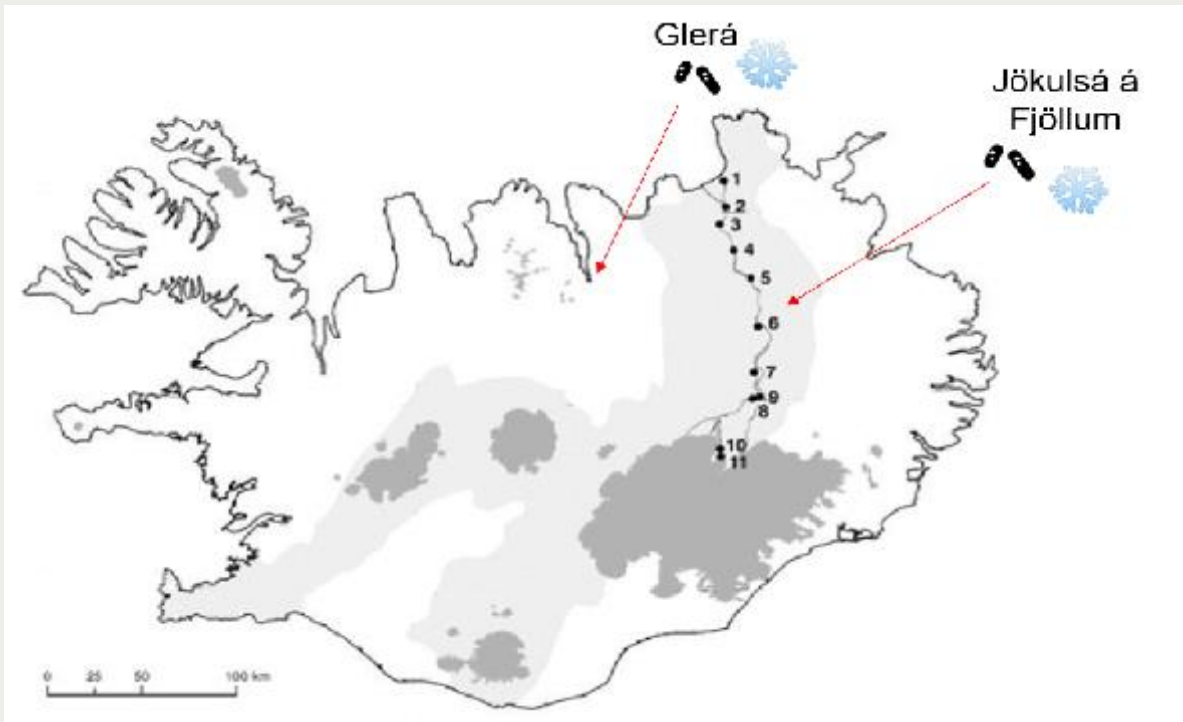
PHB price \$5-10 per kg

Polypropylene \$0.05 per kg



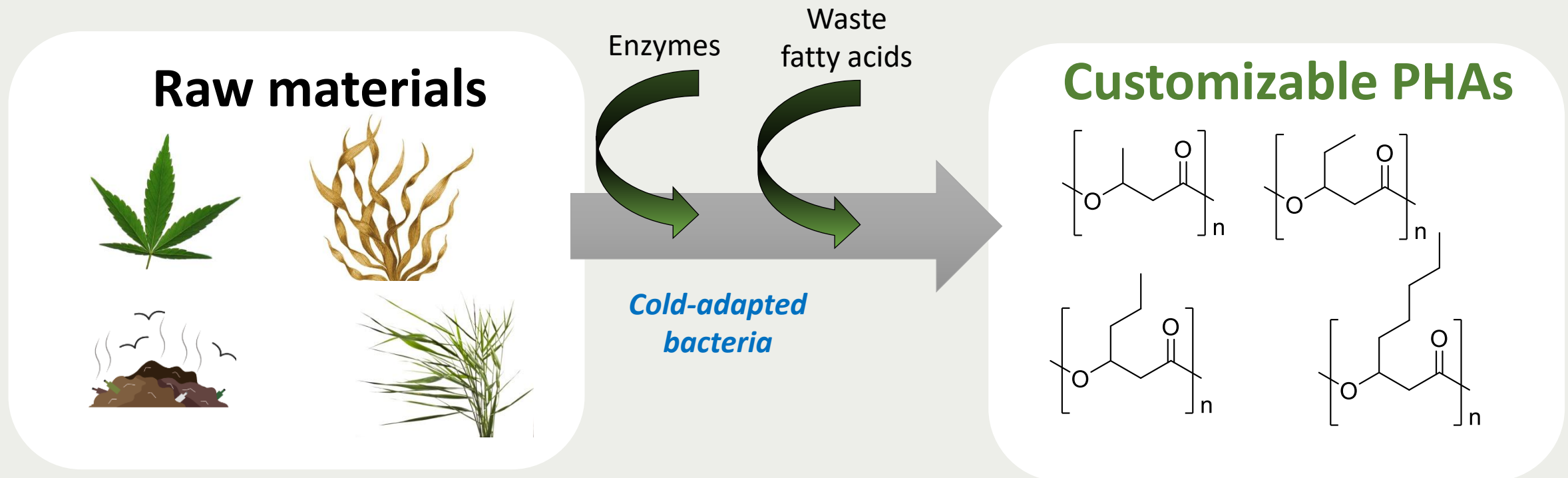
Energy costs

Bioprospecting PHA producers





Our approach



- Composition
- Size
- Functionality

Plöntuplast

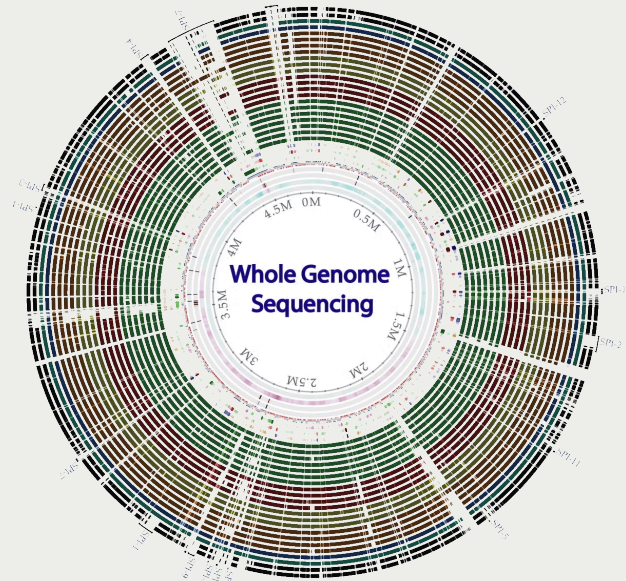
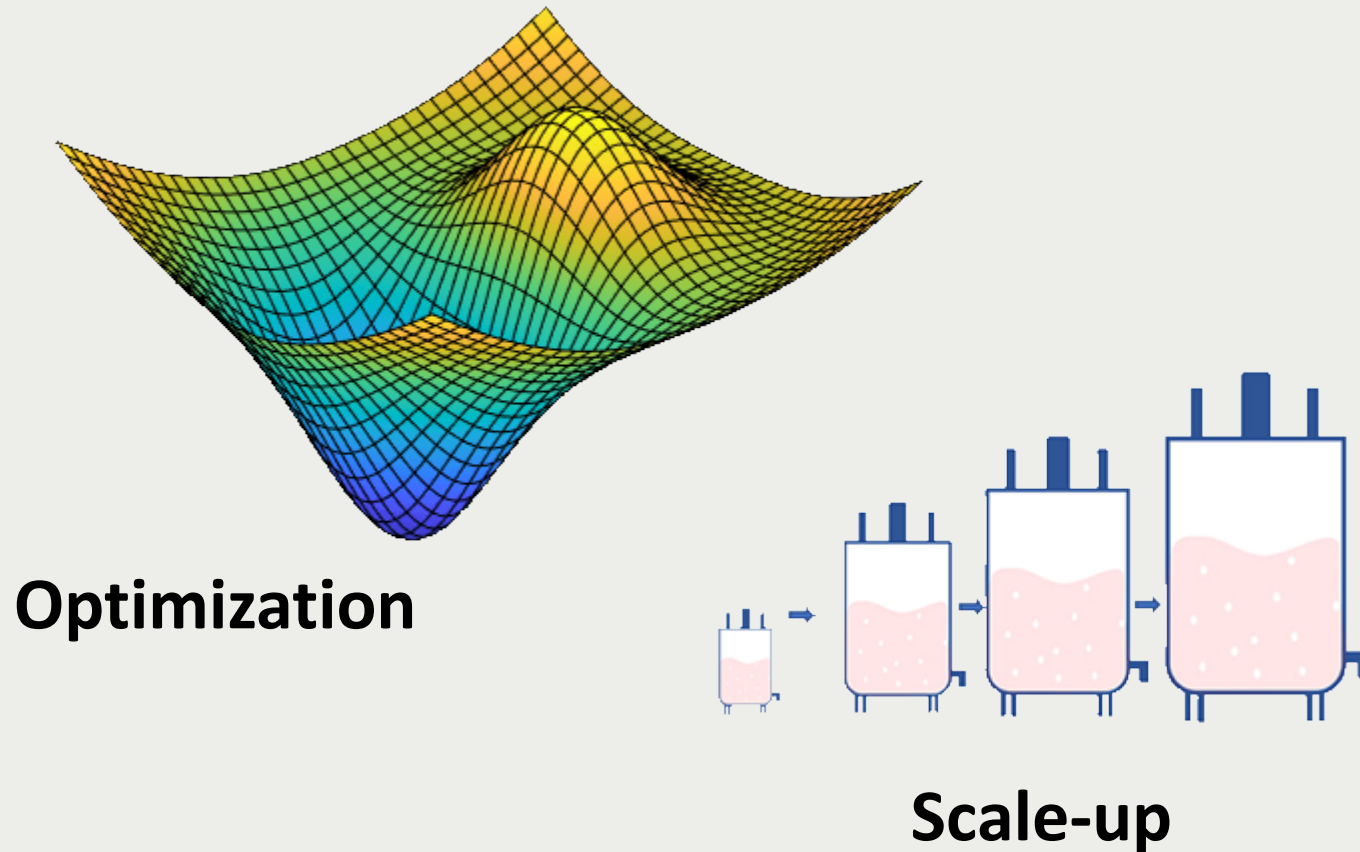
niðurbjótanlegt hráefni úr lífmassa



+



Current Activities



**Whole-genome sequencing
and genetic modification**

Contact Information



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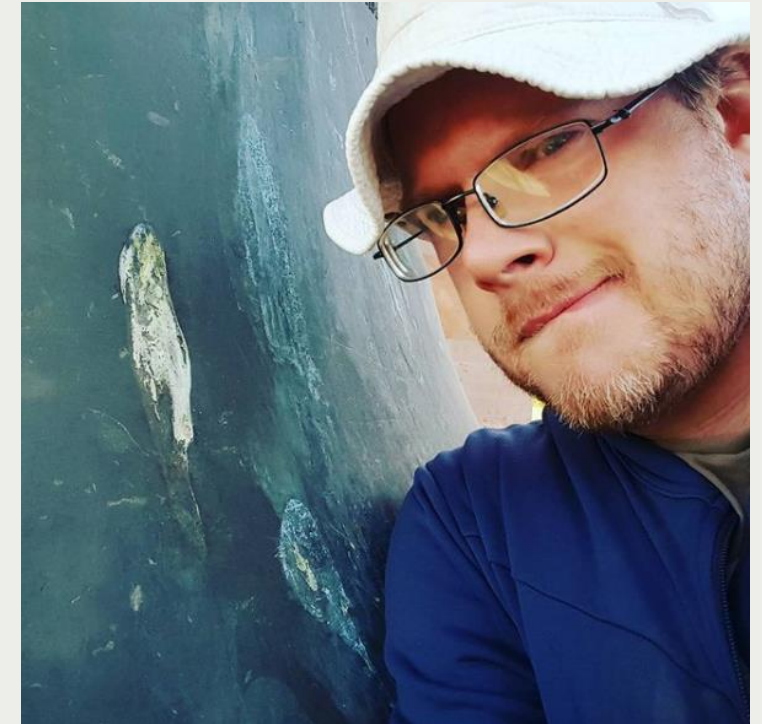
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