



***Existential threats from gene editing
via Food, environment, and the microbiome***

Jeffrey M. Smith

Executive Director
Institute for Responsible Technology



Achieved

51%

48%

Worldwide



But there is a

**BIGGER
ISSUE**



A close-up photograph showing a hand wearing a blue nitrile glove using silver tweezers to carefully place a single, bright red cherry tomato into a clear glass petri dish. The background is softly blurred, showing more of the gloved hand and a white pipette tip. The overall scene suggests a laboratory or controlled environment for genetic research.

GM02.0

GENE EDITING

Faster, cheaper, CRISPR: the new gene technology revolution



A controversial new technology is making gene editing far cheaper and easier – too easy, perhaps?

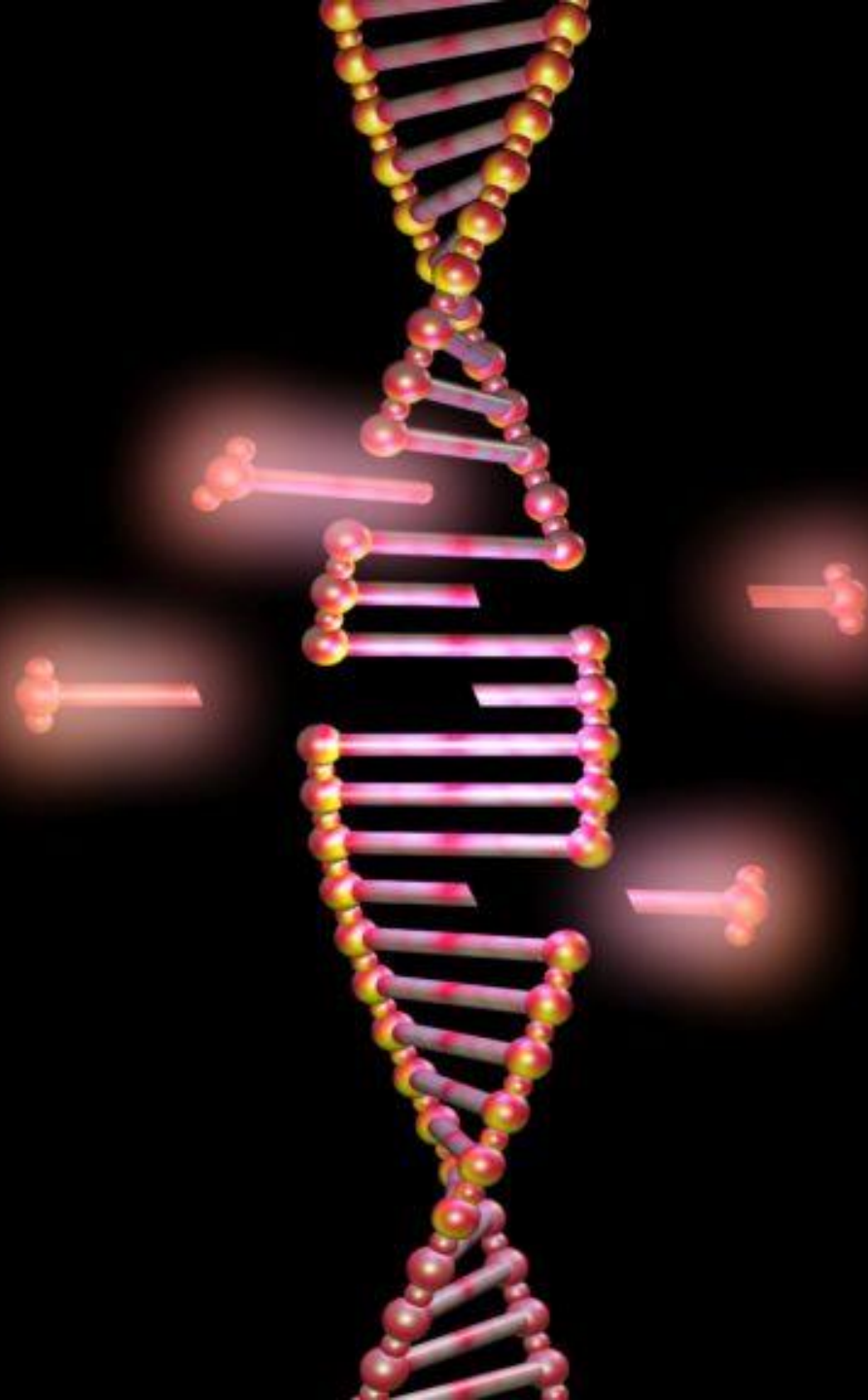


There's nothing you can do
to recall GMOs
in the environment.

GMOs are prone to
unpredictable side effects.



Nature described it as
**“Chromosomal
Mayhem”**



WHOOPSIES —

Part cow, part... bacterium? Biotech company makes heifer of gene-editing blunder

Gene-edited cow project on the butcher block after bacterial genes found.

BETH MOLE - 9/1/2019, 6:00 AM





Independent Science News
FOR FOOD AND AGRICULTURE

BIOTECHNOLOGY, COMMENTARIES, HEALTH | SEPTEMBER 23, 2019

Gene-Editing Unintentionally Adds Bovine DNA, Goat DNA, and Bacterial DNA, Mouse Researchers Find

**Accidentally added to mouse genome:
Retrovirus DNA**



7 Reasons Why Gene Editing is Dangerous and ...



Watch later



Share



REASONS WHY GENE EDITING IS

DANGEROUS

& UNPREDICTABLE



- 1
- 2
- 3
- 4
- 5
- 6
- 7

Watch on YouTube

ResponsibleTechnology.org

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But

the industry has

convinced

governments to

look the other way.



Gene-edited CRISPR mushroom escapes US regulation





**TASTE THE FIRST
CRISPR
GENE-EDITED
PRODUCE IN
U.S. RETAIL**



BOOTH 4485



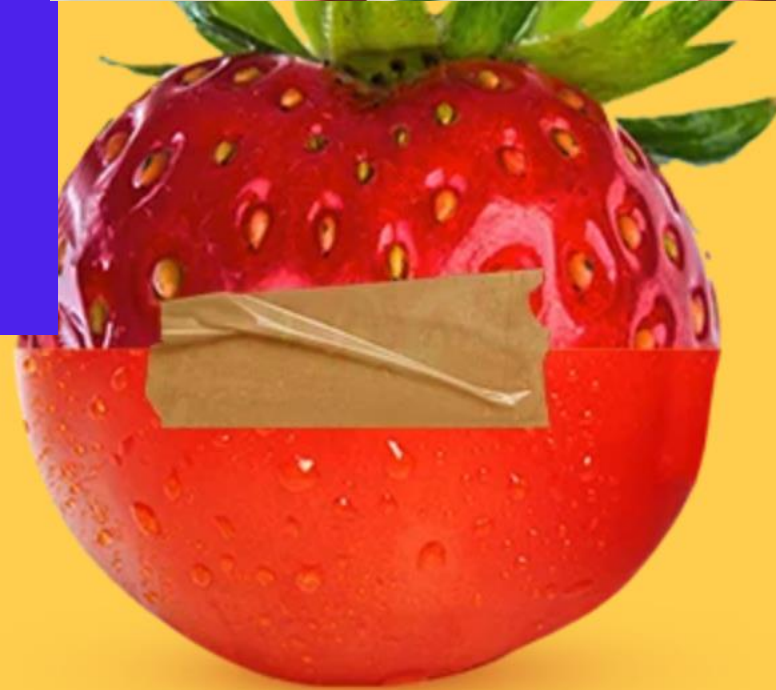
INTRODUCING CONSCIOUS™ GREENS

The Superfood greens that eat like lettuce!

[LEARN MORE →](#)



Our Food!





Replacing Food!



Replacing Nature





Gene editing **is low-cost and easily accessible.**



Gene editing **is widely deregulated.**



Gene edited GMOs can **persist in the environment and are unrecallable.**



Gene editing **is prone to side effects.**



This generation's mandate
**protect all living beings
and all future generations**

Which genetically
altered organisms
carry the
greatest
threat?



Microbiome

CO-EVOLVED





CO-EVOLVED

Extends Our Genetic Library

Outsource Functions

Dictates Our Health

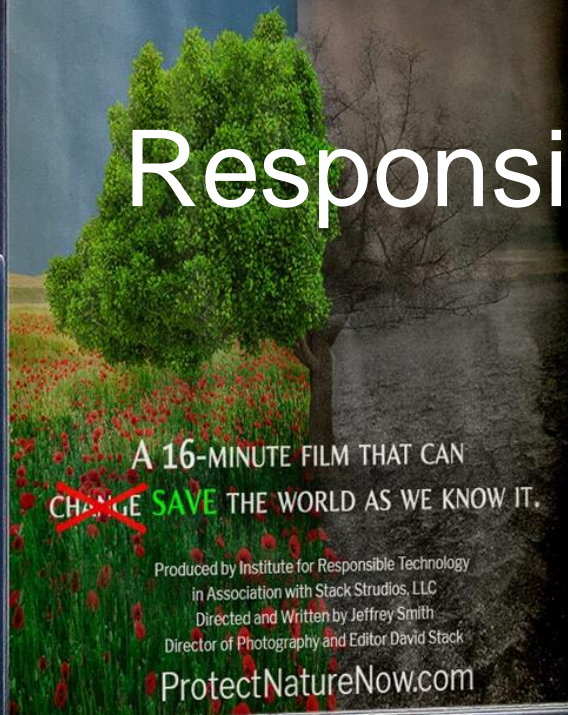


1 Trillion



DON'T LET
THE GENE
OUT OF THE BOTTLE

DR. ELAINE INGHAM DR. JONATHAN LATHAM CLAIRE ROBINSON JEFFREY SMITH JIM THOMAS KIRAN KRISHNAN MICHELLE PERRO, M.D.



ResponsibleTechnology.org

OP-ED | ENVIRONMENT & HEALTH

How One GMO Nearly Took Down the Planet

Klebsiella

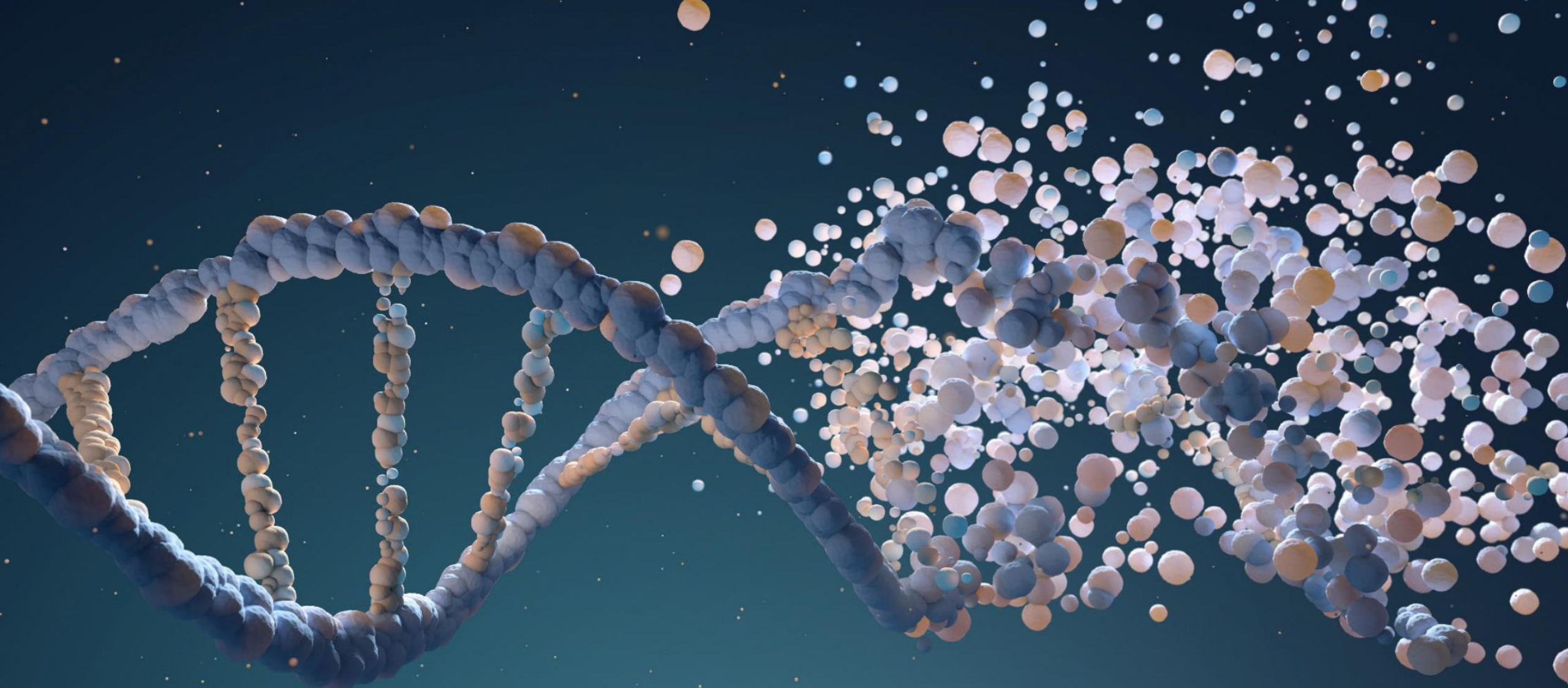
Existential biotech hazard that was designed in the 90s?

A Biological Apocalypse Averted

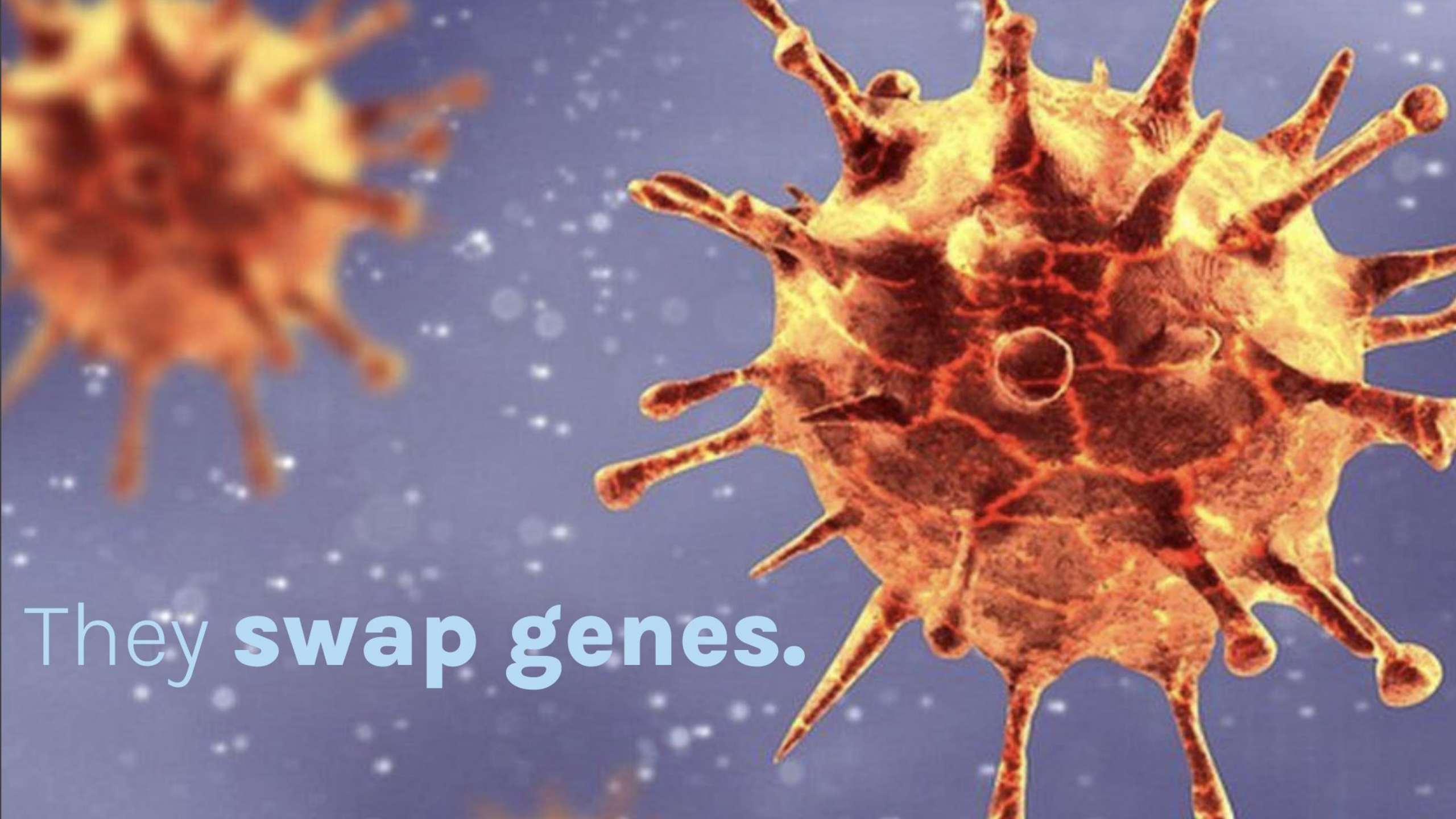
How a Biotech Company Almost Killed The World (With Booze)



They **travel.**



They **mutate.**



They **swap genes.**



They can **damage**
or **collapse ecosystems.**

A Planet at Risk

Human microbiomes are critical to keeping us healthy.

Fungal networks transport nutrients between trees and plants.

Algae produces most of the world's oxygen.

Soil microbes draw down carbon.



GM MICROBE SOURCES



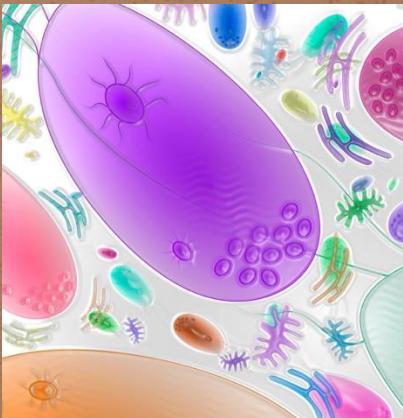
Agriculture

Millions of acres



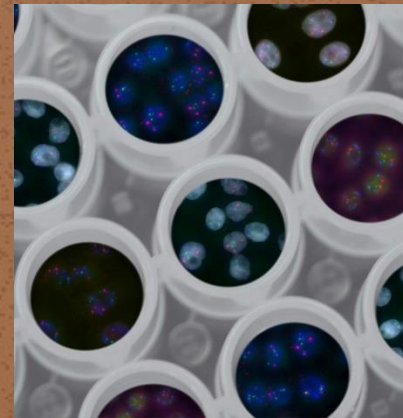
Probiotics & Medicines

Engineered microbes for consumption



Synthetic Biology

Dangerous combinations



Academia

Student and faculty experiments



**We must
lock them down.**

THE SOLUTION

Establish new regulations, laws, and treaties by:

Developing the science and creating policy recommendations.

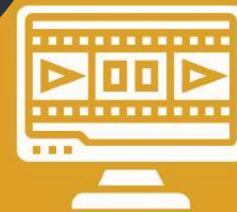


New Regulations, Laws, and Treaties

Building a global coalition uniting industries and advocacy movements.

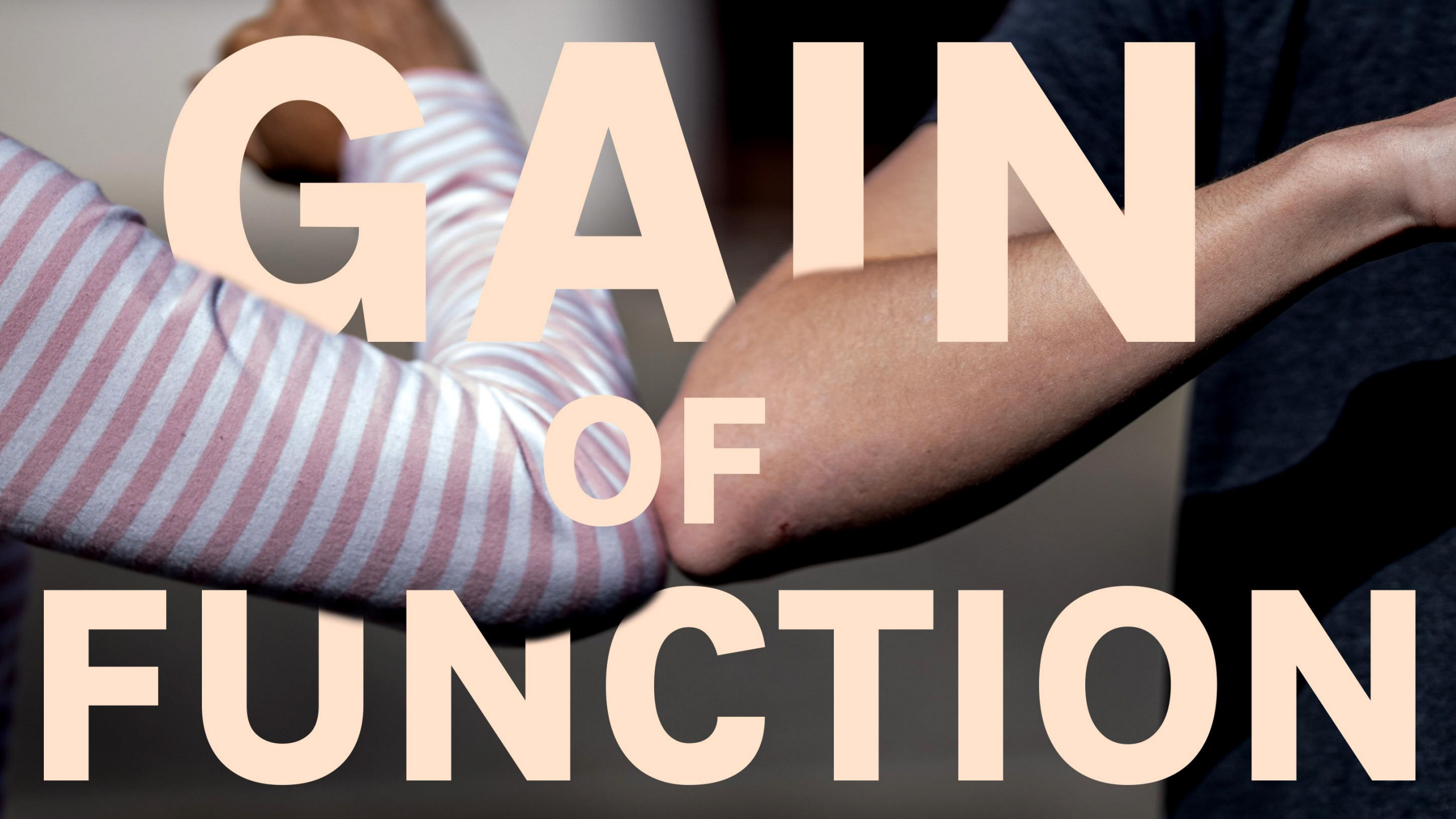


Spreading the message through popular culture.



Two blue nitrile gloves are positioned to form a heart shape. The fingers of both hands are curled inward, meeting at the top and bottom points of the heart. The background is a plain, light-colored surface.

Pandemic
silver lining
Microbial Awareness



GAIN

OF

FUNCTION

Natural allies

- Human health
- Regenerative agriculture
- Environmental conservation
- Ocean conservation
- Invasive species control
- National security

Healthcare leaders on board

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WE'RE DEFENDING
THE MICROBIOME

JOIN THE COALITION



ResponsibleTechnology.org/hcp

We need the
most influential,
most creative,
most brilliant,
and most **caring people.**

MAKE AN INVESTMENT
IN THE FUTURE TODAY

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