

Redefining natural selection: How synthetic biology may solve sustainability challenges in food, fuel and health

[S]ynthetic biology] is poised to change how we feed ourselves, clothe ourselves, fuel ourselves—and possibly even change our very selves. While scientists have for decades been able to practice basic genetic engineering—knocking out a gene or moving one between species—and more recently have learned to rapidly read and sequence genes, now researchers can edit genomes and even write entirely original DNA. That gives scientists incredible control over the fundamental code that drives all life on Earth, from the most basic bacterium to, well, us.

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The dawn of the Synthetic Age is not just the province of scientist-dreamers A 2016 Transparency Market Research report predicted that the synthetic biology market would grow from \$1.8 billion in 2012 to \$13.4 billion by 2019.

The true benefits—and consequences—of synthetic biology will come as scientists move from mimicking nature in the lab to redesigning it.

We can use that control to harness nature to our own ends and do so in a way that will help solve some of our most pressing sustainability challenges. Cells could be engineered to make meat in a lab, eliminating the need for environmentally intensive and often cruel factory farms. Bacteria could be manipulated to secrete oil, providing a truly renewable source of liquid fuel. Yeast could be designed to produce artemisinin, a vital antimalarial drug that in its natural form must be made from limited supplies of the sweet wormwood plant—which, as it happens, is already being done.

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion, and analysis. Read full, original post: [New natural selection: How scientists are altering DNA to genetically engineer new forms of life](#)