What is Synthetic Biology?

Synthetic biology uses new techniques combining biology and engineering to make new or modified living things and materials. Throughout history, humans have strived to create more desirable products such as food that is easier to grow and tastes better. Synthetic biology builds on the science of agricultural breeding and genetic engineering to create new things faster and cheaper in even more controlled and specific ways. The field is exploring where biology-based products might provide solutions to a wide diversity of problems in health, energy, and the environment.

Future synthetic biology products may include new materials, energy sources, medicines, and food.

Glowing plant
Using an enzyme from fireflies, scientists have created a modified plant that glows in the dark they hope could one day replace electric street lights.

Anti-malaria drug
Less expensive malaria drugs can be grown from modified yeast.

Vanilla made from yeast
Synthetic vanilla can be grown from modified yeast; it is less expensive than pure vanilla from vanilla beans and tastes better than artificial vanilla.

More sustainable laundry detergent
Oils grown from modified algae can take the place of palm oil; avoiding harvesting oil from palm trees, which can damage rainforests.