

WHAT IS BIOTECHNOLOGY?

Biotechnology is helping to heal, fuel and feed the world

At its simplest, biotechnology is technology based on biology. Biotechnology harnesses cellular and biomolecular processes to develop technologies and products that help improve our lives and the health of our planet. We have used the biological processes of microorganisms for more than 6,000 years to make useful food products, such as bread and cheese, and to preserve dairy products.

Modern biotechnology provides breakthrough products and technologies to combat debilitating and rare diseases, reduce our environmental footprint, feed the hungry, use less and cleaner energy, and have safer, cleaner and more efficient industrial manufacturing processes. Currently, there are hundreds of biotechnology health care products and vaccines available to patients, many for previously untreatable diseases. More than 13.3 million farmers around the world use agricultural biotechnology to increase yields, prevent damage from insects and pests and reduce farming's impact on the environment. And more than 50 biorefineries are being built across North America to test and refine technologies to produce biofuels and chemicals from renewable biomass, which can help reduce greenhouse gas emissions.

Policy Position

To ensure that the next generation of biotechnology breakthroughs get to the people who need them most, our lawmakers should continue to support policies that foster innovation, fuel investment and encourage the entrepreneurial spirit that has made America the leader in this cutting-edge field. These include:

- An efficient and predictable regulatory environment;
- Transparent payment systems that reward innovation and encourage free-market competition;
- Continued advancement and funding of scientific understanding; and
- Strong intellectual property (IP) rights and a reliable system for IP transfer, licensing and collaboration.

Key Points

- ✓ Today, **more than 1.7 million Americans** are employed in the biosciences across the U.S., and the industry is growing jobs at a rate double the national average.
- ✓ **Almost 60 percent** of all new medicines that treat patients across the world are innovated right here in the United States.
- ✓ Small, emerging companies are at the forefront of the search for new cures and therapies, accounting for **approximately 70 percent** of clinical trials.
- ✓ The *Economist Magazine* recently noted, "Creating new drugs through biotechnology is at the risky end of business in which superhuman stamina and bottomless pockets are minimum requirements."
- ✓ The biopharmaceutical industry has the **highest percentage of R&D reinvestment** of any U.S. industry.
- ✓ Biotechnology is a risky, expensive and time-consuming endeavor.
- ✓ **More than 90 percent** of biopharmaceutical companies are unprofitable.
- ✓ **90 percent** of clinical trials ultimately fail.
- ✓ Success is only possible with a well-developed policy framework.