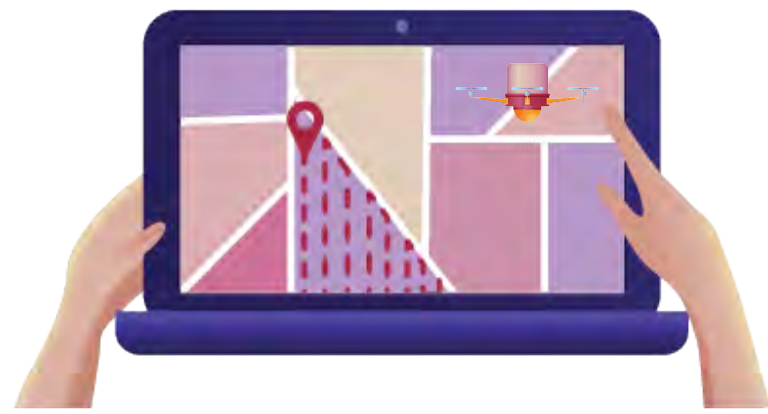


SAFEGUARDING THE BIOECONOMY

U.S. BIOECONOMY

Economic activity that is driven by research and innovation in the life sciences and biotechnology, and that is enabled by technological advances in engineering and in computing and information sciences.

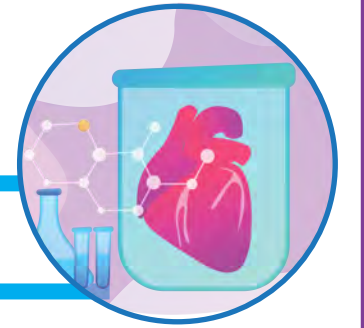


BIOMEDICAL

Criteria for inclusion include any medical products or services resulting from research and development, or innovation, in the life sciences.

Examples

- Pharmaceutical products
- Lab-grown organoids
- Medical devices



AGRICULTURAL

Criteria for inclusion include the use of (1) genetic engineering when creating a strain or seed; (2) advanced molecular biology technique for marker-assisted breeding programs; (3) large informatics databases and computational techniques for either breeding applications or enhanced land use capabilities; or (4) plant biomass in a downstream bioprocessing and/or fermentation process utilizing recombinant DNA technology. This set of criteria is also applied to agricultural animals (with the exclusion of point 4).

Examples

- Genetically modified crops/animals (e.g., genetically engineered salmon, heat-resistant cows)
- Precision agriculture



BIOINDUSTRIAL

Criteria for inclusion include products or chemicals produced using a biosynthetic or semi-biosynthetic route utilizing recombinant DNA technology.

Examples

- Bio-based chemicals
- Biofuels
- Bio-based plastics

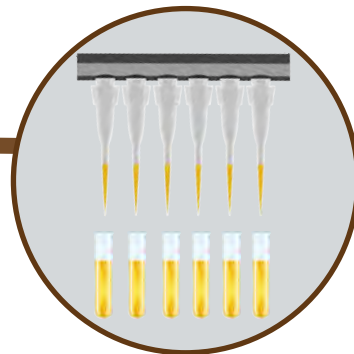


TOOLS, KITS, AND SERVICES

Criteria for inclusion include tools, kits, and services that support or enable the advancement of biotechnology or life science research.

Examples

- Life sciences or biotechnology-related software and databases
- Specialized equipment or instruments for use in the bioeconomy (e.g., pipetting robots, mass spectrometers, DNA sequencing, and synthesizers)
- Bioscience patent lawyers



READ THE REPORT

Safeguarding the Bioeconomy (2020)
www.nap.edu/25525

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