

NASA spinoffs bolster climate resilience, improve medical care and more

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To make sure ventilators could be quickly manufactured and administered to those in need during the COVID-19 pandemic, a team of engineers at JPL created the Ventilator Intervention Technology Accessible Locally (VITAL) device, made of off-the-shelf parts. Credit: NASA/JPL-Caltech

JPL-developed technologies, including VITAL, FINDER, 3D-printing methods, and Voyager spacecraft communications, are featured in the agency's technology publication.

When it comes to NASA, most people look to the skies as rockets, rovers, and astronauts push the boundaries of space exploration. But the benefits of going above and beyond can be found here on Earth through products and services born from NASA innovation.

The latest edition of NASA's [Spinoff publication](#) features dozens of new commercialized technologies that use the agency's technology, research, and/or expertise to benefit people around the globe. It also includes a section highlighting technologies of tomorrow.

"From the heavens to hospitals around the world, NASA spinoffs are improving life for all of humanity," said NASA Administrator Bill Nelson. "The work NASA does in research and technology gives businesses a competitive edge, driving an economy that allows America to compete globally and creating good-paying jobs for this generation—and the next."

NASA's Spinoff 2023 features more than 40 companies using NASA technology, research, and funding to create better [batteries to store green energy](#), improve [airport ground traffic](#) to save passengers and airlines time while cutting [fuel costs](#), [distribute ventilators](#) around the world, and even [heal wounds faster](#) on humans and animals alike.

"Before it launched and gave us a new view of the universe, NASA's James Webb Space Telescope was already improving one of the most common eye surgeries on Earth," said Jim Reuter, associate administrator of the agency's Space Technology Mission Directorate (STMD). "This is just one example of how the technology we develop for space exploration is improving the quality of life for people here on

Earth."

This year in Spinoff, readers will learn more about:

- How companies are [using satellite data](#) to boost human resiliency to climate change and protect homeowners against disasters such as wildfires and floods
- A new, sustainable, meat-free [protein alternative](#) born from NASA-funded research at Yellowstone National Park
- A robotic astronaut's [deep-diving successor](#) that's ready to work in offshore operations like oil wells, [wind turbines](#), and fish farms

The publication also features a new cancer [diagnostic tool](#) informed by research on astronauts exposed to space radiation while aboard the International Space Station, a NASA-designed technology that helps [find trapped people](#) in the wake of disaster, and a new [3D-printing modeling program](#) that uses "digital cloning" to cut costs and speed up development of complex industrial parts.

"It isn't just the [commercial space industry](#) that can leverage our innovations," said Daniel Lockney, executive of NASA's Technology Transfer program. "Practically any industry area can find a NASA technology as a solution to its business needs. Our scientists, researchers, and engineers are constantly creating new materials, software, tools, and more. If it isn't here now, it soon will be."

Spinoff is part of the agency's Technology Transfer program within STMD. The program is charged with finding the widest possible applications for NASA technology through partnerships and licensing agreements with industry, ensuring that NASA's investments in its missions and research find additional applications that benefit the nation and the world.

Readers also can check out Spinoffs of Tomorrow, a section that highlights 20 NASA technologies available for licensing and commercialization. Some examples include a [wind warning system](#) that uses Doppler lidar alerts to protect wind turbine blades, sensors that can boost [cameras to see through waves](#) and explore ocean environments like endangered coral reefs, and a [robotic exoskeleton](#) that can help rehabilitate arm and shoulder injuries.

Those interested in licensing NASA technology are encouraged to begin their search by browsing the agency's [patent portfolio](#).

More information: To read or download the digital version of the latest issue of Spinoff, visit spinoff.nasa.gov/

Provided by NASA

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