

U.S. Statement
UN Committee on the Peaceful Uses of Outer Space
Agenda Item 9 – Spinoff Benefits of Space Technology
Statement by Kevin Conole
Vienna, Austria, June 25, 2025

Thank you, Chair. The United States continues to find new and innovative applications for space science and technology to our daily lives here in Earth. As part of its core mission, NASA is committed to making technology developed for space exploration available to entrepreneurs, companies, academia, and other government agencies. Each year, NASA technologies find new life through secondary uses that benefit people around the globe.

For nearly 50 years, NASA has tracked examples of successful commercialization in its annual Spinoff publication. We have documented well over two thousand space technologies that are improving life on Earth. Spinoff technologies featured in the latest edition include a new antigravity treadmill for people with mobility issues and a commercial science platform on the International Space Station that recently succeeded in bioprinting knee cartilage and heart tissue.

We continue to find ways to turn seemingly esoteric concepts into practical and helpful solutions. For example, NASA funded experimental work using fungus as a building material for lunar or Martian habitats, which led to a program that produces fungus-based bricks for low-cost, rapidly built humanitarian and emergency housing. Binding dust and rocks from the lunar surface into bricks with fungal mycelia – the rootlike part of a mushroom – would save the weight of transporting habitats and create a thermally insulative, fire-resistant, radiation-absorbing building material. On Earth, the concept provides many of the same benefits and can make use of biowaste for cheap, sturdy, sustainable construction.

In the 1980s and '90s, a NASA technologist pioneered the idea of using air pressure to simulate gravity for astronauts exercising on treadmills in

space. He then reversed the concept to offset gravity on an earthbound treadmill. Years later, his son co-founded a company to commercialize the idea, leading to the first antigravity treadmills for use in rehabilitation clinics and by professional sports teams, with uses for treating joint issues, obesity, or other common conditions.

Lastly, Chair, the U.S. National Laboratory on the International Space Station is home to several platforms that are owned by companies and commercially available to customers for in-space science experiments. One of these is based on technology that has been in use since the 1990s recently succeeded in bioprinting a human meniscus. Tearing this knee cartilage is a common injury, and the current treatment is to cut away damaged tissue and stitch up what remains. The ability to produce new meniscus tissue would dramatically improve treatment options. The same platform was used in early 2024 to print and grow the first live human heart tissue in space, a process which benefits from the absence of gravity, allowing the tissue to grow more uniformly than in a petri dish on Earth.

These are just a few examples of the ways we ensure innovations developed for space exploration are benefiting everyone by creating jobs, saving resources, and improving lives globally. NASA and the United States' investments in space science and exploration missions directly benefit so many lives around the globe and we look forward to continuing these efforts.

Additional information about these and other spinoffs can be found in the NASA publication Spinoff 2025, which can be found online (at <https://spinoff.nasa.gov/>).

Thank you.