

Bridging the Gap: Use of Spaceflight Technologies for Earth-Based Problems

Alaina Brinley, Carissa Vidlak, and Jeffrey Davis

Spaceflight is colloquially deemed, “the final frontier,” or the last area which humans have not yet explored in great depth. While this is true, there are still many regions on Earth that remain isolated from the urban, socially and electronically connected world. Because travelling to space requires a great deal of foresight, engineers are required to think creatively in order to invent technologies that are durable enough to withstand the rigors of the unique and often treacherous environment of outer space. The innovations that are a result of spaceflight designs can often be applied to life on Earth, particularly in the rural, isolated communities found throughout the world.

The NASA Human Health and Performance Center (NHHPC) is a collaborative, virtual forum that connects businesses, non-profit organizations, academia, and government agencies to allow for better distribution of ideas and technology between these entities (<http://www.nasa.gov/offices/NHHPC>). There are many technologies that have been developed for spaceflight that can be readily applied to rural communities on Earth. For example, water filtration systems designed for spaceflight must be robust and easily repaired; therefore, a system with these qualifications may be used in rural areas on Earth.

This particular initiative seeks to connect established, non-profit organizations working in isolated communities throughout the world with NASA technologies devised for spaceflight. These technologies could include water purification systems, solar power generators, or telemedicine techniques. Applying innovative, spaceflight technologies to isolated communities on Earth provides greater benefits from the same research dollars, thus fulfilling the Space Life Science motto at Johnson Space Center: Exploring Space and Enhancing Life. This paper will discuss this NHHPC global outreach initiative and give examples based on the recent work of the organization.