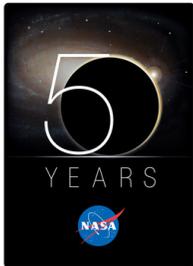




NASA Contributions to Cancer Research



Since its founding fifty years ago in 1958, NASA's exploration and research missions have benefited people around the world through the expansion of our civilization's horizons, the acquisition of knowledge, and the development of new technologies and applications that provide amazing new advances in the quality of human life. What follows is a brief overview of how technologies developed through the Nation's investment in aerospace research have come back down to Earth to benefit the medical community in its understanding of cancers and cancer treatments.



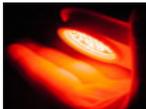
NASA is partnered with the National Institutes of Health (NIH) to use the U.S. portion of the Space Station for medical research, including cancer studies.

[/www.niams.nih.gov/News_and_Events/NIH_NASA_Activities/nih_nasa_mou.asp](http://www.niams.nih.gov/News_and_Events/NIH_NASA_Activities/nih_nasa_mou.asp)



To simulate the weightless conditions of space and thereby bring the advantages of ISS research to laboratories on Earth, NASA developed a bioreactor device to simulate the effect of reduced gravity.

science.nasa.gov/NEWHOME/br/bioreactor.htm



LED Photodynamic therapy research has been applied to activating cancer drugs once they have been pinpointed inside a tumor.

ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20060022057_2006145857.pdf



Charge-coupled devices (CCDs) used in the Hubble Space Telescope to convert a distant star's light into digital images have been adapted to improve detection of small masses in breast tissue.

[/ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20020080116_2002131836.pdf](http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20020080116_2002131836.pdf)



Another technique for analysis of mammography uses software designed by NASA to significantly improve the extraction of patterns from complex data sets, like those returned from deep space.

[/ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20080003922_2008001499.pdf](http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20080003922_2008001499.pdf)



The potential of carbon nanotubes to diagnose and treat brain tumors is being explored through a partnership between NASA's Jet Propulsion Laboratory, and City of Hope, a leading cancer research and treatment center in California.

www.jpl.nasa.gov/news/news.cfm?release=2008-006



The BioScan System, developed by OmniCorder Technologies, Inc. at NASA's Jet Propulsion Laboratory, is able to locate cancerous lesions by detecting the cancer's ability to recruit a new blood supply. This technology will reduce the time taken to detect cancerous cells and allow for earlier intervention.

www.sti.nasa.gov/tto/spinoff2000/hm3.htm

**Find out more at NASA's Innovative Partnership program website
<http://www.ipp.nasa.gov/contributions.htm>**