

NASA Research and Technology Development Priorities

The NASA Office of STEM Engagement (OSTEM) identifies research and technology priorities based on alignment with NASA's Mission Directorates. The Aeronautics Research Mission Directorate (ARMD), Human Exploration and Operations Mission Directorate (HEOMD), Science Mission Directorate (SMD), and the Space Technology Mission Directorate (STMD) identify their priorities on the NASA website www.nasa.gov/about/directorates/index.html.

For information on NASA's missions and educational objectives, please visit www.nasa.gov/missions/index.html and the following URLs:

- Aeronautics Research (<http://www.aeronautics.nasa.gov/>)
- Human Exploration Operations (<http://www.nasa.gov/directorates/heo/home/index.html>)
- Science (<http://science.nasa.gov/>)
- Space Technology (<http://www.nasa.gov/directorates/spacetech/home/index.html>)

NASA Mission Directorate (MD) Descriptions

Aeronautics Research

NASA's Aeronautics Research Mission Directorate works to solve the challenges that still exist in our nation's air transportation system: air traffic congestion, safety, and environmental impacts. NASA aeronautics has made decades of contributions to aviation. Every U.S. commercial aircraft and U.S. air traffic control tower has NASA-developed technology on board that helps improve efficiency and maintain safety. Research conducted by ARMD directly benefits today's air transportation system, the aviation industry, and the passengers and businesses who rely on aviation every day. ARMD scientists, engineers, programmers, test pilots, facilities managers and strategic planners are focused on aviation's future. They design, develop and test advanced technologies that will make aviation much more environmentally friendly, maintain safety in more crowded skies, and ultimately transform the way we fly. NASA's aeronautics research is primarily conducted at four NASA centers: Ames Research Center and Armstrong Flight Research Center in California, Glenn Research Center in Ohio, and Langley Research Center in Virginia.

Human Exploration and Operations Mission Directorate

The Human Exploration and Operations Mission Directorate provides the Agency with leadership and management of NASA space operations related to human exploration in and beyond low-Earth orbit. EO also oversees low-level requirements development, policy, and programmatic oversight. The International Space Station, currently orbiting the Earth with a crew of six, represents the NASA exploration activities in low-Earth orbit. Exploration activities beyond low Earth orbit include the management of Commercial Space Transportation, Exploration Systems Development, Human Space Flight Capabilities, Advanced Exploration Systems, and Space Life and Physical Sciences Research & Applications. The directorate is similarly responsible for Agency leadership and management of NASA space operations related to Launch Services, Space Transportation, and Space Communications in support of both human and robotic exploration programs.

Science

NASA's Science Mission Directorate and the nation's science community use space observatories to conduct scientific studies of the Earth from space to visit and return samples from other bodies in the solar system, and to peer out into our Galaxy and beyond. NASA's Science Mission Directorate (SMD) is responsible for directing and overseeing the nation's space research program in Earth and space science. The Directorate engages the external and internal science community to define and prioritize science questions and seeks to expand the frontiers of four broad scientific pursuits: Earth Science, Planetary Science, Heliophysics, and Astrophysics. Through a variety of robotic observatory and explorer craft, and through sponsored research, the Directorate provides virtual human access to the farthest reaches of space and time, as well as practical information about changes on our home planet.

Space Technology

The Space Technology Mission Directorate is responsible for developing the crosscutting, pioneering, new technologies and capabilities needed to achieve NASA's current and future missions. Technology drives exploration to the Moon, Mars and beyond. NASA's Space Technology Mission Directorate (STMD) develops transformative space technologies to enable future missions. As NASA embarks on its next era of exploration, STMD is focused on advancing technologies and testing new capabilities at the Moon that will be critical for crewed missions to Mars. In many ways, the Moon will serve as a technology testbed and proving ground for Mars. STMD engages and inspires thousands of entrepreneurs, researchers, and innovators, creating a community of America's best and brightest working on the nation's toughest challenges. Space technology research and development take place at NASA centers, universities, and national labs. STMD leverages partnerships with other government agencies as well as commercial and international partners. Our current technology portfolio spans a range of discipline areas and technology readiness levels. Investments in revolutionary, American-made space technologies provide solutions on Earth and in space. NASA technology turns up in nearly every corner of modern life. We make our space tech available to commercial companies to generate real world benefits – everything from creating jobs to saving lives.

Please visit each NASA organization website to find detailed information about current projects and current areas of interest. For more information detailing the four mission directorates and Center Offices, visit:

http://www.nasa.gov/offices/education/missions/gen_overview.html