

## Langley Research Center (LaRC)

***Agency Introduction: The FY 2012 budget request for NASA is \$18.7 billion, the FY 2010 enacted level. The NASA Authorization Act of 2010 has provided a clear direction for NASA, and the skilled workforce at NASA Centers is critical to the success of the Act's important objectives.***

***Highlights of LaRCs FY 2012 activities:*** The FY 2012 budget proposes \$927 million in spending at LaRC.

- \$242 million in Space Technology for strategically-guided projects aligned with the Center core competencies of structures and materials and entry systems, the Langley Innovation Fund, disbursement of select SBIR/STTR awards and program funds for the Game Changing Development Level 2 program office which LaRC manages.
- \$181 million for Aeronautics Research to support contributions to NextGen, aviation safety, and environmentally responsible aviation.
- \$94 million in Science development of new satellites to enhance observations of the climate and other Earth systems.
- \$39 million for Exploration Multi-Purpose Crew Vehicle and Space Launch System engineering support.
- \$11 million to further NASA's Science, Technology, Engineering, and Mathematics (STEM) education efforts.
- \$360 million for Institutional requirements for the Center's operations in support of its mission requirements. This funding includes: \$319 million for Cross-Agency Support; \$41 million for Construction and Environmental Compliance Restoration for minor revitalization and construction projects to repair and modernize center infrastructure. Also includes funds to construct an integrated service building to consolidate activities into a central area and permit demolition of 98,000 square feet of aging, inefficient facilities.

NASA Langley Research Center (LaRC) is located in Hampton, Virginia. Established in 1917 as the first civil aeronautics research laboratory, the Center also has a rich heritage in innovative space and science technologies that address national priorities in innovative research and development (R&D) with potential to revolutionize spaceflight.

Langley works in partnership with U.S. industry, universities, and other government institutions to solve national challenges. Distinguished by its unique blend of aerosciences, structures and materials, atmospheric characterization, systems analysis, and entry, descent and landing expertise, the Center's work focuses on technological advances in fundamental fluid physics through development and demonstration, to operations and expertise in innovation and technology development that spurs new ideas to transform space exploration, aeronautics, and science.

Langley's facilities enable space exploration, aeronautics, and science to perform the experimentation, testing and validation from concept to flight needed to advance next-generation aerospace technologies. End-to-end technical capabilities and facilities are vital to maintaining global leadership in aeronautics, addressing key questions related to the earth's climate variability, and advancing exploration of our solar system, and are often called upon to address broader national issues and respond to urgent national problems from industry and other government Agencies (e.g. the recent Chilean miner rescue, 911 calls on

airplane and spacecraft performance anomalies, crash investigations, volcanic ash tracking, oil spill etc.). Langley will also further NASA's commitment to Science, Technology, Engineering, and Mathematics (STEM) education.

Langley will serve as the Level 2 Program Office for the Space Technology Game Changing Development project. Aligned with the Center's technical strengths, LaRC will lead the Lightweight Materials and Structures, Adaptive Entry Systems and Mars Science Laboratory Entry, Decent, and Landing Instrumentation (MEDLI) project elements within Space Technology. Within Adaptive Entry Systems, Langley will focus on hypersonic inflatable aerodynamic decelerators. Langley will implement the Langley Innovation Fund and continue to support Small Business Innovation Research/Small Business Technology Transfer Research (SBIR/STTR) and the Office of the Chief Technologist's Partnerships Innovation and Commercial Space and Strategic Integration activities.

Economic Impact:

NASA Langley FY 2012 budget:	\$927 million
NASA Langley FY 2012 civil servant workforce (FTE estimate)	1,927
NASA Center Contracts/Grants Obligated (FY 2010)	\$474 million

(Obligation data from the Federal Procurement Data System)

Current impact statement(s) to state, region:

NASA Langley is a vital asset for the Nation, the state of Virginia and the region. In addition to maintaining highly skilled technological and manufacturing expertise for the area, Langley's facilities, 180 buildings situated on 788 acres, represent an investment in land, buildings, and equipment of \$3.0 billion. The Center's Fiscal Year (FY) 2010 budget of \$786 million (including American Recovery and Reinvestment Act funds and external business) provided significant impact for the Nation and the Commonwealth, generating additional local, state, and federal taxes. The Center's budget continues to leverage its significant value-added impacts in awards to public and private entities for the state, resulting in: \$259 million in contracts and grants by way of 295 entities and \$33 million to academic institutions; and throughout the Nation \$474 million by way of 937 entities and \$66 million to academic institutions.

NASA's Langley is a global leader in cutting-edge research and technology that solves technical challenges, both inside and outside of NASA. Through its Strategic Relations Office, NASA Langley partners with small and medium firms, large corporations, academia, and other federal agencies to expand the Nation's economic competitiveness.

Over the past five years, NASA Langley has reported over 700 new technologies. During the same period, 79 patents were granted and 16 licenses were established to transfer technology to various US Government, non-profit, and commercial entities. Among the portfolio of technologies is the polyimide insulation foam, FPF-44, a NASA Commercial Invention of the Year, that has one-tenth the weight of traditional pipe insulation and is temperature resistance close to 500F, thus reducing cost while increasing safety. The Navy has incorporated the foam insulation on chiller, steam and seawater piping on vessels - saving as much as 100 tons per ship.