Jet Propulsion Laboratory (JPL)

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 JPL's FY 2012 activities: The FY 2012 budget proposes $1,195 million in spending at JPL.

- $859 million in Science to continue research and development for the robotic exploration of space. In late FY 2011, NASA will launch Aquarius, Juno and the Gravity Recovery And Interior Laboratory (GRAIL) missions. In FY 2012, NASA will launch the Mars Science Laboratory (MSL) and the Nuclear Spectroscopic Telescope Array (NuSTAR). Other missions in formulation or development include Soil Moisture Active/Passive (SMAP), Orbiting Carbon Observatory (OCO-2), and the 2016 Mars Trace Gas Orbiter. Over twenty JPL missions are in operations.
- $166 million towards Space Operations to conduct communications and navigation for missions beyond Earth orbit.
- $93 million in Space Technology for strategically-guided projects aligned with the laboratory's Communications, Navigation and Entry, Descent and Landing expertise, the JPL Innovation Fund, and disbursement of select SBIR/STTR awards.
- $4 million for Exploration work on advanced environmental monitoring and control support under the Advanced Life Support project.
- $2 million to further NASA's Science, Technology, Engineering, and Mathematics (STEM) education efforts.
- $70 million for Institutional requirements for operations in support of its mission requirements. This funding includes: $17 million for Cross-Agency Support; $53 million for Construction and Environmental Compliance Restoration for minor revitalization and construction projects to repair and modernize center infrastructure to reduce risk of mission disruption due to facility failures. Also includes constructing a multi-level parking garage to replace parking capacity lost when the current lease for parking space with the City of Pasadena expires.

The Jet Propulsion Laboratory (JPL) is located in Pasadena, California, and is NASA's only Federally Funded Research and Development Center (FFRDC). JPL is managed by the NASA Management Office through a contract with the California Institute of Technology. The JPL is a leader in research and development for robotic exploration of space for NASA, and has a wide-ranging charter for Solar System Exploration, Earth Observation, Astrophysical Research, and Technology Development.

JPL manages the Deep Space Network, which is the communications gateway to robotic spacecraft throughout the solar system beyond the low Earth orbit. JPL's core capability is to integrate science, engineering and technology that provide end-to-end implementation of space missions. It has the capacity to do so in-house with experienced workforce or in collaborations with industry and academia.

JPL also applies its capabilities to national security in areas synergistic with its work for NASA, and develops technologies for uses on Earth in fields from public safety to medicine, capitalizing on NASA's investment in space technology. The tools developed at JPL for its spacecraft expeditions to other planets have also proved invaluable in providing new insights and discoveries in studies of Earth, its atmosphere, climate, oceans, geology and the biosphere.

Fiscal Year 2011/early 2012 are one of the busiest periods for JPL, as ongoing missions encounters two comets (EPOXI and Stardust NEXT missions), launches the Earth science Aquarius mission, launches the Jupiter bound JUNO probe, encounters asteroid Vesta with its DAWN spacecraft, launches GRAIL into orbit around the Moon, and launches MSL to the surface of the red planet.

JPL will participate in several projects funded through Space Technology: managing the Low Density Supersonic Decelerator – the first Crosscutting Space Technology Development (CSTD) Demonstration Mission, supporting parts of the Deep Space Navigation and Communications efforts, implementing the JPL Innovation Fund, continuing partnerships with small businesses through SBIR/STTR, and engaging in the Office of the Chief Technologist's Partnerships Innovation and Commercial Space and Strategic Integration activities.

Economic Impact:

NASA JPL FY 2012 budget: $1,195 million

Current impact statement(s) to state, region

NASA JPL is a significant asset for the state of California and the region. JPL obligated in excess of $712 million to its subcontractors during FY 2010. Of this amount, $147 million was spent with small businesses and $55 million was provided to universities to further research.

Within California, JPL obligated funding to 1,500 subcontracts to all business types during FY 2010. Out of the total of $712 million in obligations, more than $333 million or roughly 46% went to businesses located in California. Of the $333 million, $95 million went to small businesses of all types (SB, SDB, SBWO, etc.) and $9 million went to educational institutions across the state.

JPL is responsible for identifying and transferring technology to support economic competitiveness. Through its commercial program office, NASA JPL partners with local businesses, state agencies and national institutions to support and expand economic competitiveness.

Over the past five years, JPL has reported over 2,000 new technologies. During the same period, 208 patents were granted and 1,972 licenses were established to transfer technology to various US Government, non-profit, and commercial entities. Among the portfolio of licensed patents is the groundbreaking CMOS Active Pixel Sensor which revolutionized digital cameras and enabled their widespread use in applications such as mobile devices, miniature endoscopes and automobiles.