

Ames Research Center (ARC)

Agency Introduction: The FY 2012 budget request for NASA is \$18.7 billion, the FY 2010 enacted number. 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 ARC FY 2012 activities: The FY 2012 budget proposes \$755 million in spending at ARC.

- \$194 million in Science that contributes to Earth Science, Astrophysics and Planetary Science. Ames Science missions include the Kepler planet-hunting telescope; the science program for the Stratospheric Observatory for Infrared Astronomy (SOFIA); and the Lunar Atmosphere and Dust Environment Explorer (LADEE) being prepared for launch by November 2013.
- \$134 million for Aeronautics Research to support contributions to NextGen, aviation safety, and environmentally responsible aviation.
- \$105 million in Space Technology for strategically-guided projects aligned with the Center core competencies of small spacecraft missions, telerobotics, biotechnology and entry systems, the Ames Innovation Fund, disbursement of select SBIR/STTR awards and program funds for the Emerging Commercial Space, SBIR/STTR, Franklin Small Satellite Subsystems, and Edison Small Satellite Demonstrations Level 2 program offices which Ames manages.
- \$55 million for Exploration capabilities in ISS medical and human research, advanced life support systems and SLS engineering support
- \$11 million towards Space Operations that contribute to the International Space Station.
- \$5 million to further NASA's Science, Technology, Engineering, and Mathematics (STEM) education efforts.
- \$251 million for Institutional requirements for the Center's operations in support of its mission requirements. This funding includes: \$212 million for Cross-Agency Support; \$39 million for Construction and Environmental Compliance Restoration for minor revitalization to repair and modernize center infrastructure to reduce risk of mission disruption due to facility failures. Includes installing exterior siding, roofing and windows to Hanger 1 to complement the historic structure's architecture.

Ames Research Center (ARC) is located at the Moffett Field, California, the heart of California's dynamic Silicon Valley. Ames is a leader in thermal protection for entry, descent and landing systems; information technology; high-performance computing; intelligent robotics and systems; air traffic management; biology and biotechnology; human factors; Earth, space and life sciences; advanced materials and devices; and small spacecraft missions. Because of the unique skill sets, Ames is a center of innovation and creativity, conducting the research and developing affordable technologies that enable NASA's aerospace and exploration missions and improve the quality of life on Earth.

In the area of Aeronautics research, Ames continues to advance concepts and technologies for efficient national airspace operations, tools to analyze aviation data for safety, methodologies to improve human performance in the aviation system, and develop new technology to enable quieter and more capable rotorcraft. Ames is the lead in the aeronautic research to enhance NASA's ability to verify and validate complex software-based systems with focus on promoting reliable, secure, and safe use in the national airspace; and operational and safety issues related to the integration of unmanned aircraft systems into the national airspace.

In the area of Space Technology, Ames will focus on the advances required for NASA's future missions that will also enable NASA to apply its intellectual capital to develop technology solutions addressing broader national needs. Ames will have management responsibility for the Emerging Commercial Space, SBIR/STTR, and the Franklin and Edison Small Satellite Space Technology Level 2 Program Offices. Aligned with the Center's technical strengths, Ames will serve as project manager for the first Edison Small Satellite Demonstration Mission, lead the Space Synthetic Biology, Autonomous Systems and Human Exploration Telerobotics project elements within Space Technology, perform deployable aeroshell and flexible ablator development work within the Adaptive Entry Systems project element of Space Technology, implement the Ames Innovation Fund, and continue to support Office of the Chief Technologist's Partnerships Innovation and Commercial Space and Strategic Integration activities.

Ames assets include NASA's Astrobiology and Lunar Science institutes and the NASA Research Park, a world-class, shared-use R&D and education campus comprising more than 70 on-site partners working together on innovation, entrepreneurship, and Science, Technology, Engineering and Mathematics (STEM) education. Resident at Ames are also many unique national facilities, including the world's largest wind tunnel; one of the nation's most capable supercomputers, Pleiades; several state-of-the-art flight simulators; the arc jets; a Mars wind tunnel; and much more.

Ames is the scientific leader of the Kepler mission's search for Earth-sized exoplanets in the habitable zone of distant stars and also the science operations of the Stratospheric Observatory for Infrared Astronomy's (SOFIA) to study our Universe. Ames is the NASA lead in developing innovative collaborative partnerships with industry, academia, non-traditional partners, other Government agencies and non-profits, successfully leveraging tax-payer provided resources to enhance NASA's return on investment and provide down-to-Earth benefits that have become central to our very way of life. Ames will also further NASA's commitment to STEM education.

Economic Impact:

NASA Ames FY 2012 budget:	\$755 million
NASA Ames FY 2012 civil servant workforce (FTE estimate)	1,231
NASA Center Contracts/Grants Obligated (FY 2010)	\$578 million

(Obligation data from the Federal Procurement Data System)

Current impact to the state, region:

NASA Ames is a key asset to the state of California, the San Francisco Bay Area region and the nation. Overall, Ames' research and technology development activities generate an estimated \$1.3 billion in overall annual economic output, including more than \$900 million and nearly 6,000 jobs in California. NASA Ames partners with Fortune 500 companies, Silicon Valley companies, start-up companies, state agencies, other government agencies, etc.

Over the last five years, Ames has reported over 1,000 new technologies. During the same period, 66 patents were granted and 17 licenses were established to transfer technology to commercial companies. In addition Ames released 73 software packages for licensing to industry, academia and other government agencies. Among the portfolio of licensed patents is the Direct-To Software that will be incorporated in the Boeing's new aircraft flight management system called the Boeing SPACER (Strategic Pre-Alignment of Aircraft En Route). This product will offer air transport operators flight route efficiency advisories that will result in both lower cost and safer flight operations for the public.