National Aeronautics and Space Administration

NASA Ames Research Center

Thomas Edwards
Deputy Director
NASA Ames Research Center

August 2015

NACA Laboratories

Joseph S. Ames

NACA

Langley

Ames

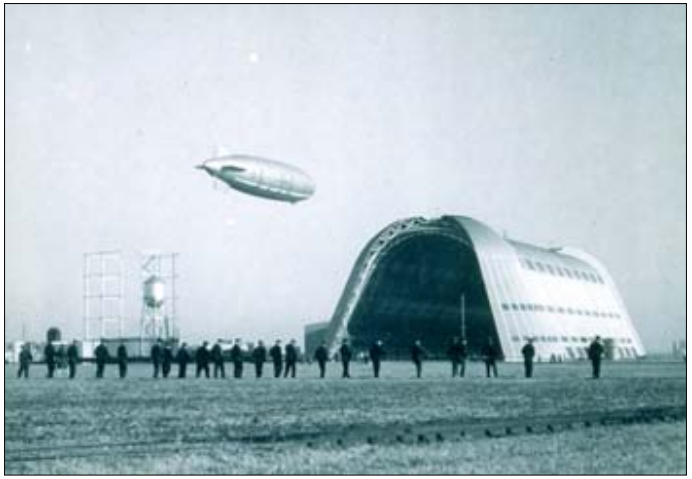
Lewis

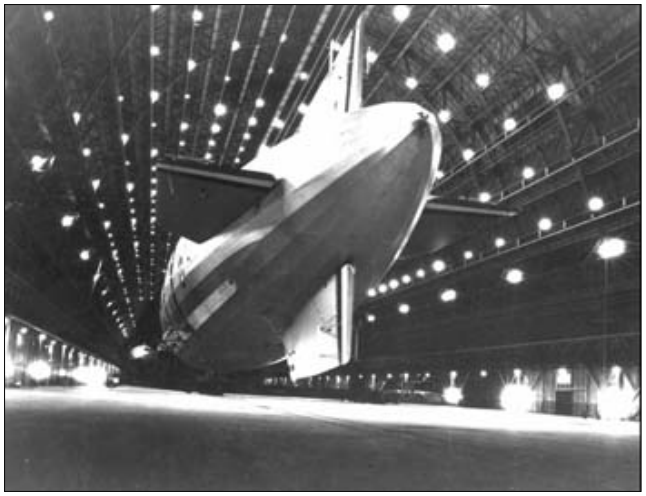
Dryden

NASA

1915 1939 1940 1946 1958

1934 Macon & Hangar 1



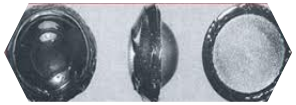


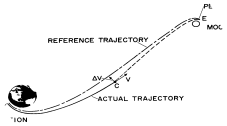
Aerial View of NASA Ames Research Center

75 Years of Innovation

Ames Research Center

NASA


Tektites



Apollo Guidance System

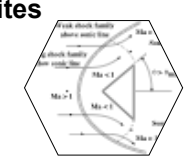
X-36

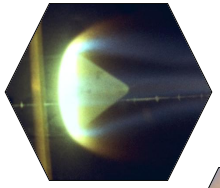
Lunar Prospector

SOFIA

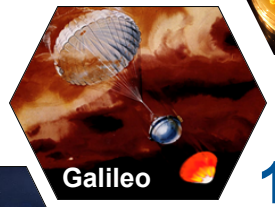
2015

Flight Simulator


Blunt Body Concept

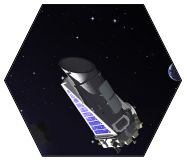

Apollo Heat Shield Tests

Pioneer 10/11


Galileo

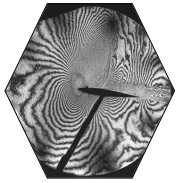
Space Biology

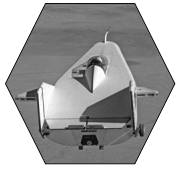
SSERVI

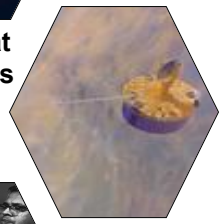

Kepler

1990

2000

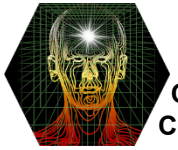

Transonic Flow

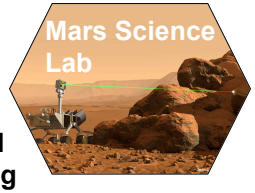

Lifting Body


Pioneer Venus

Viking

1980

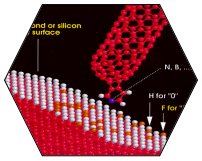

Human Centered Computing



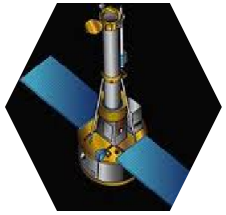
Sustainability Base

Life Sciences Research

1970


Nanotechnology

NASA Research Park


IRIS

Aeronautics Research

Swept-Back/Wing

Flight Research

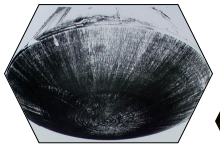
1960

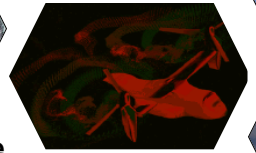
Tiltrotor

ER-2

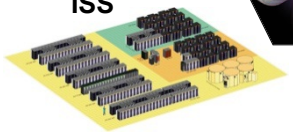
ISS

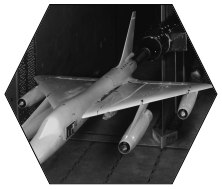
LCROSS


Apollo Re-Entry Shape


CFD

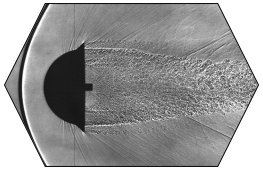
Kuiper Observatory


Pleiades

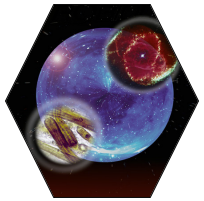

Conical Camber

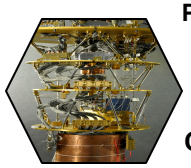
1950

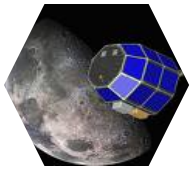
Arcjet Research


Hypervelocity Free Flight

80x120 Wind Tunnel


Astrobiology Institute


Quantum Computing


LADEE

1940

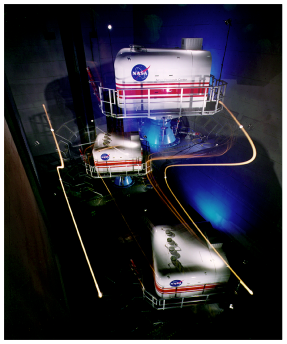
Ames Today

- 2480 employees
- $900M + annual revenue (including reimbursable)
- An additional >1000 students, summer 2014

- Science
  - Space, Earth, Biological Sciences
  - Astrobiology, Lunar Science
- Exploration Systems
  - Exploration Technology Development
  - Thermal Protection Systems
  - Supercomputing
- Projects and Missions
- Aeronautics & Aviation
  - NextGen Airspace Systems
  - Fundamental Aeronautics
  - Aviation Safety
  - Green Aviation
- Affordable Small Satellites
- Innovation, Education, & Entrepreneurial Collaborations
  - NASA Research Park

Current Active Facilities, 2012

National Full Scale Aerodynamic Complex, 80x120 Wind Tunnel



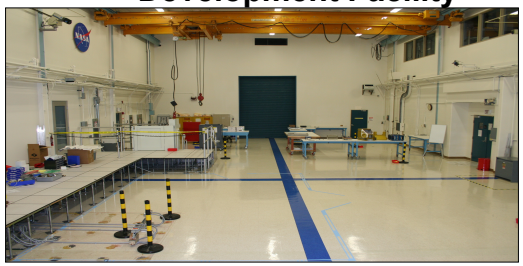
Vertical Motion Simulator

Small Spacecraft Development Facility

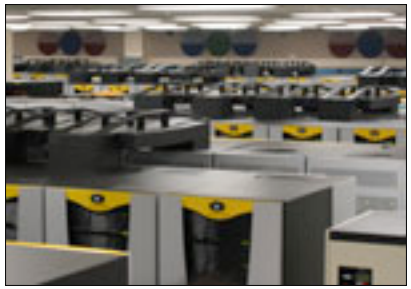
Unitary Plan Wind Tunnel

SOFIA

Machine Shops

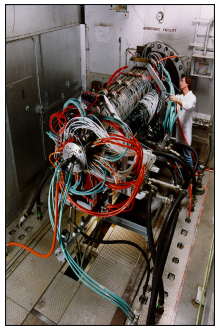


Small Satellite Lab

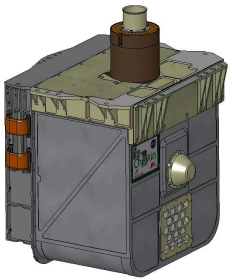


Pleiades - Columbia Super Computer

Ballistic Range



Arc Jets



MSL – Chem Lab

Air Traffic Management Lab

NARI NLSI Astrobiology Institute

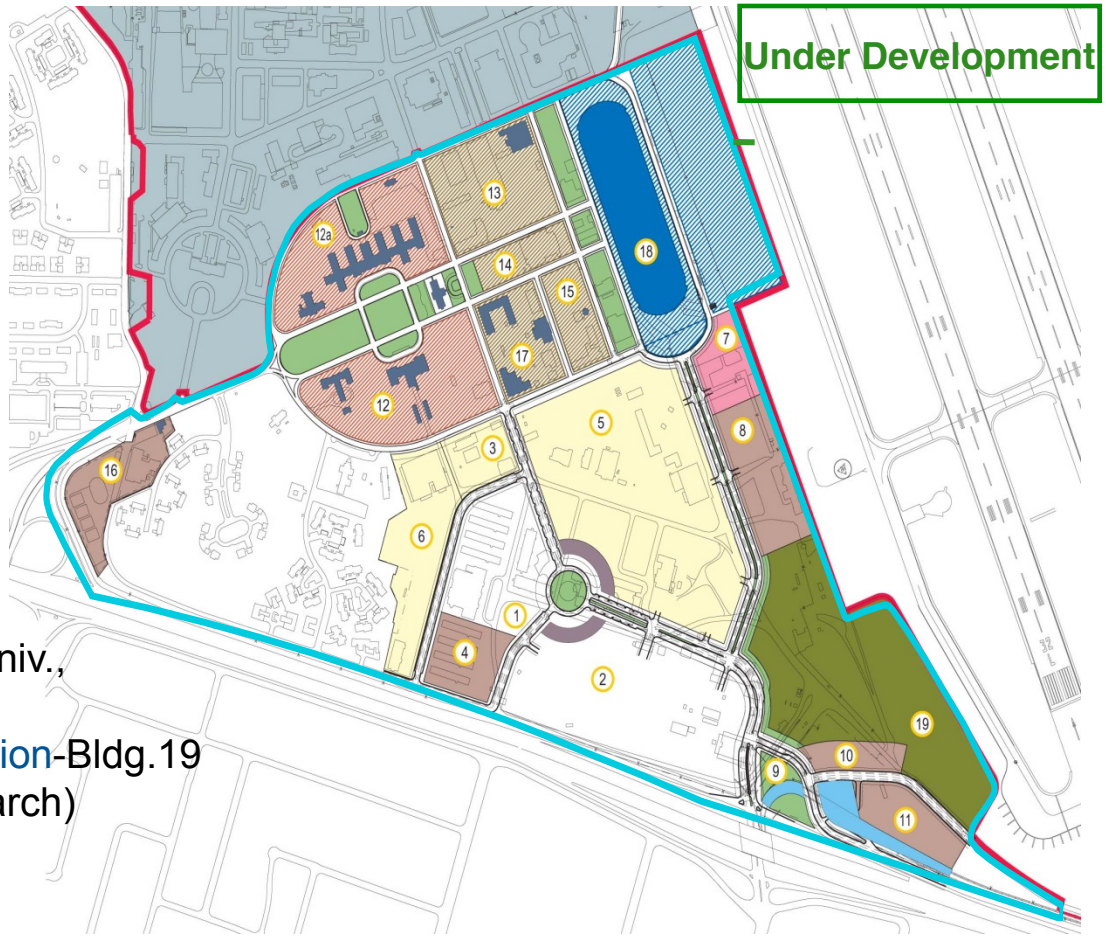
Virtual Institutes

NASA Research Park

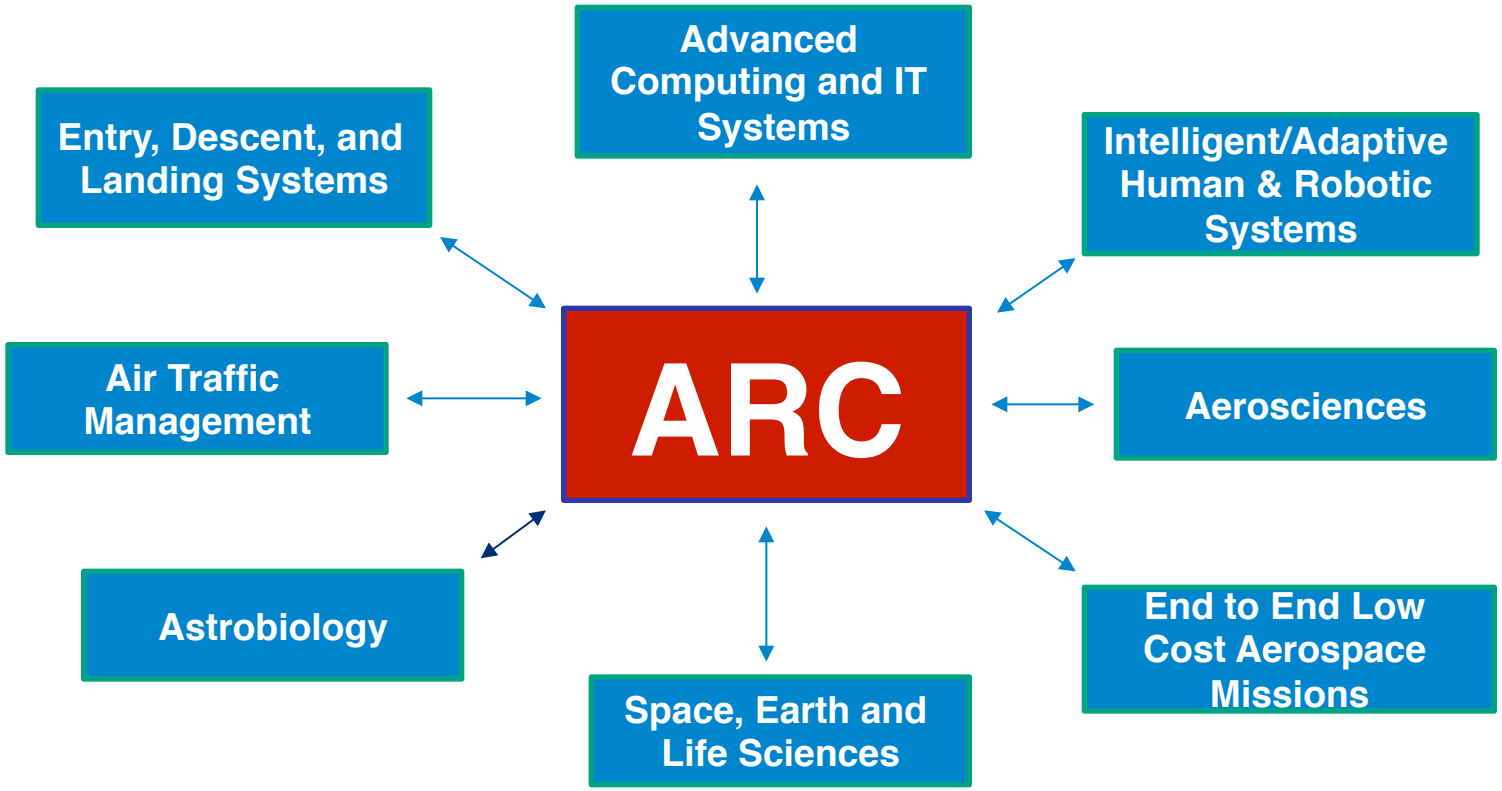
Innovative Collaboration in Science, Engineering & Education

90+ Partners Today

University Associates
Google-North East Section
University of California/UARC-Bldg. 555
M2MI Corporation-Bldg.19
Carnegie Mellon University-Bldg. 23
San Jose State University
-Metropolitan Technology
Center in Bldg. 583C
Foothill-De Anza Community College
United Negro College Fund Special
Programs Corporation-Bldg.19
Space Technology Center
-San Jose State, Stanford, Santa Clara Univ.,
Utah State Univ. /Micro Satellite Classes
Kentucky Science & Technology Corporation-Bldg.19
Bloom Energy-Bldg. 543 (Fuel Cell Research)
Industry Partners-Bldg. 566 & 19
UAV Center-Bldg.18
International Space University
Singularity University

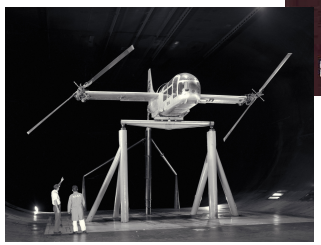


Ames Core Competencies



Examples of Ames Research contributions to advanced Vertical Flight Aircraft

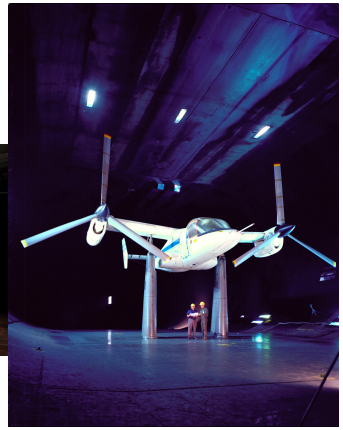
Rotary Wing



XV3

XH59A

UH60 Air loads

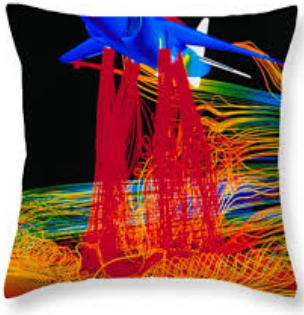


XV15

V22

F35-B

In Ground Effect CFD

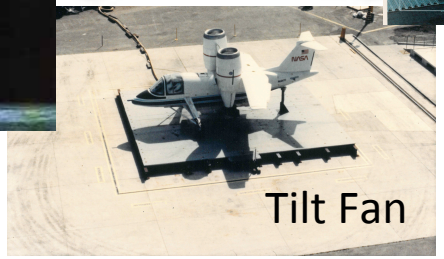


E-7A

YAV8
C

X-14

GD-VTOL
Fighter



Tilt Fan

Powered Lift