



Air Force Research Laboratory



Range Kick-Off Cape Canaveral, FL

29 January 2014

Dr. Joseph P. Fellner
Air Force Research Laboratory

Integrity ★ Service ★ Excellence



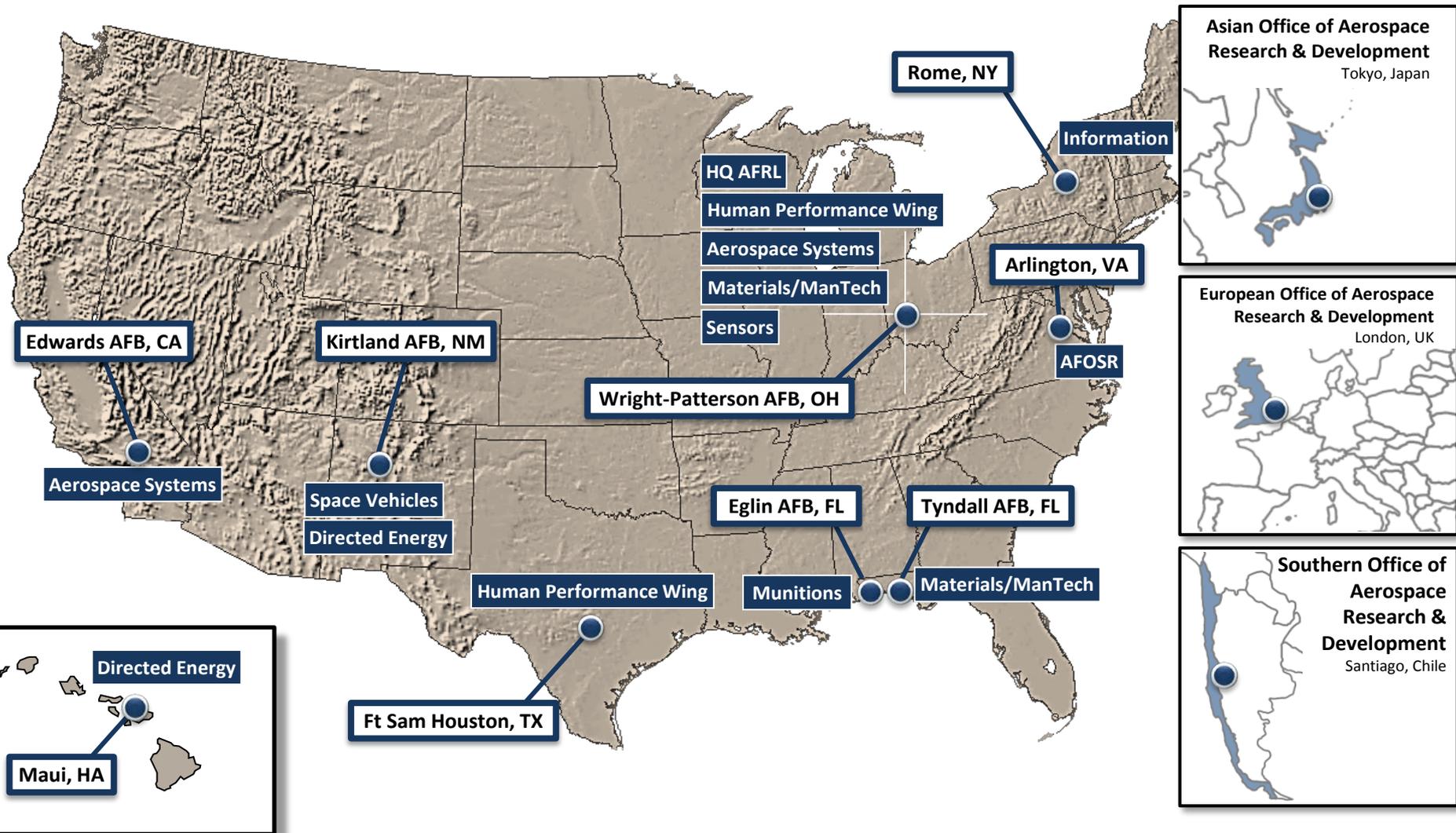
AFRL Mission



**Leading the discovery,
development, and
integration of affordable
warfighting
technologies for our air,
space, and cyberspace
force.**



AFRL Locations





AFRL Research Focus Areas



Next Gen Aerospace Systems



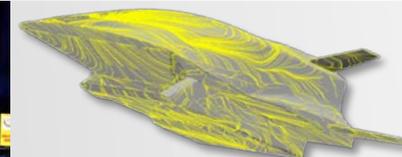
Advanced Turbine Materials



Turbine Sustainment



Adaptive Engine



Hypersonics

\$674M

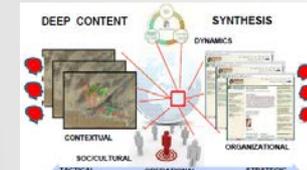
Command and Control / Intelligence, Surveillance, and Reconnaissance (C²/ISR)



Synchronized Operations



Processing, Exploitation, and Dissemination (PED)



Human-Centered ISR

\$353M

Space and Nuclear



Space Access



Payloads



Space Platforms



Advanced Experiments

\$320M

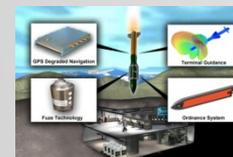
Weapons



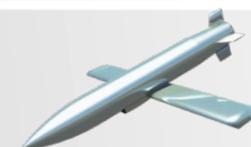
DE Counter-electronics



High Speed Strike



High Velocity Penetrating Munitions



Next Gen Flexible / Dynamic Control Weapons

\$268M

\$ Fiscal Year 2013 President's Budget (no external)





AFRL Research Focus Areas



Cyber and Communications

\$146M



Space Communications



Cyber



Affordability & Sustainment

\$133M



Manufacturing Technology



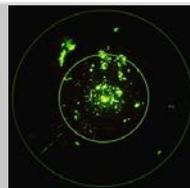
Sustainment



Energy/Fuels

Electronic Warfare / Electronic Protection (EW/EP)

\$79M



EW Plus



Distributed EW



Infrared countermeasures

Human Performance

\$56M



Autonomy



Aerospace Physiology & Toxicology



Training & Decision Making Tech



\$ Fiscal Year 2013 President's Budget (no external)



Aerospace Systems Directorate

Mission and Vision



MISSION/VISION: Leading discovery and development of world class integrated Aerospace Systems S&T for national security

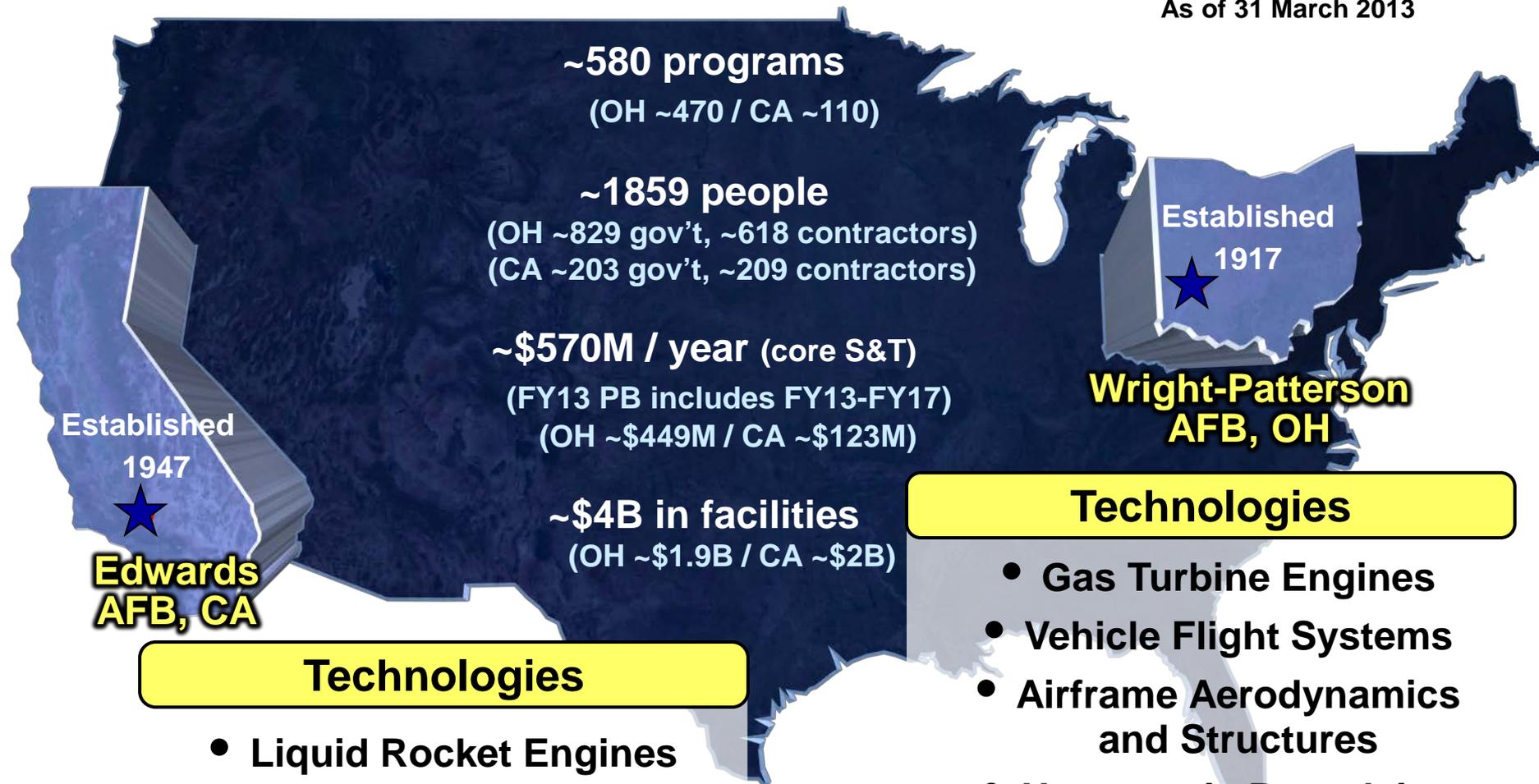




AFRL's Aerospace Systems Directorate



As of 31 March 2013



Technologies

- Liquid Rocket Engines
- Solid Rocket Motors
- Spacecraft Propulsion

Technologies

- Gas Turbine Engines
- Vehicle Flight Systems
- Airframe Aerodynamics and Structures
- Hypersonic Propulsion



AFRL's Aerospace Systems Investment

(FY13-17 from FY13 PBR ~ \$572M/year)



Power and Control

Aerospace Vehicles

High Speed / Hypersonics

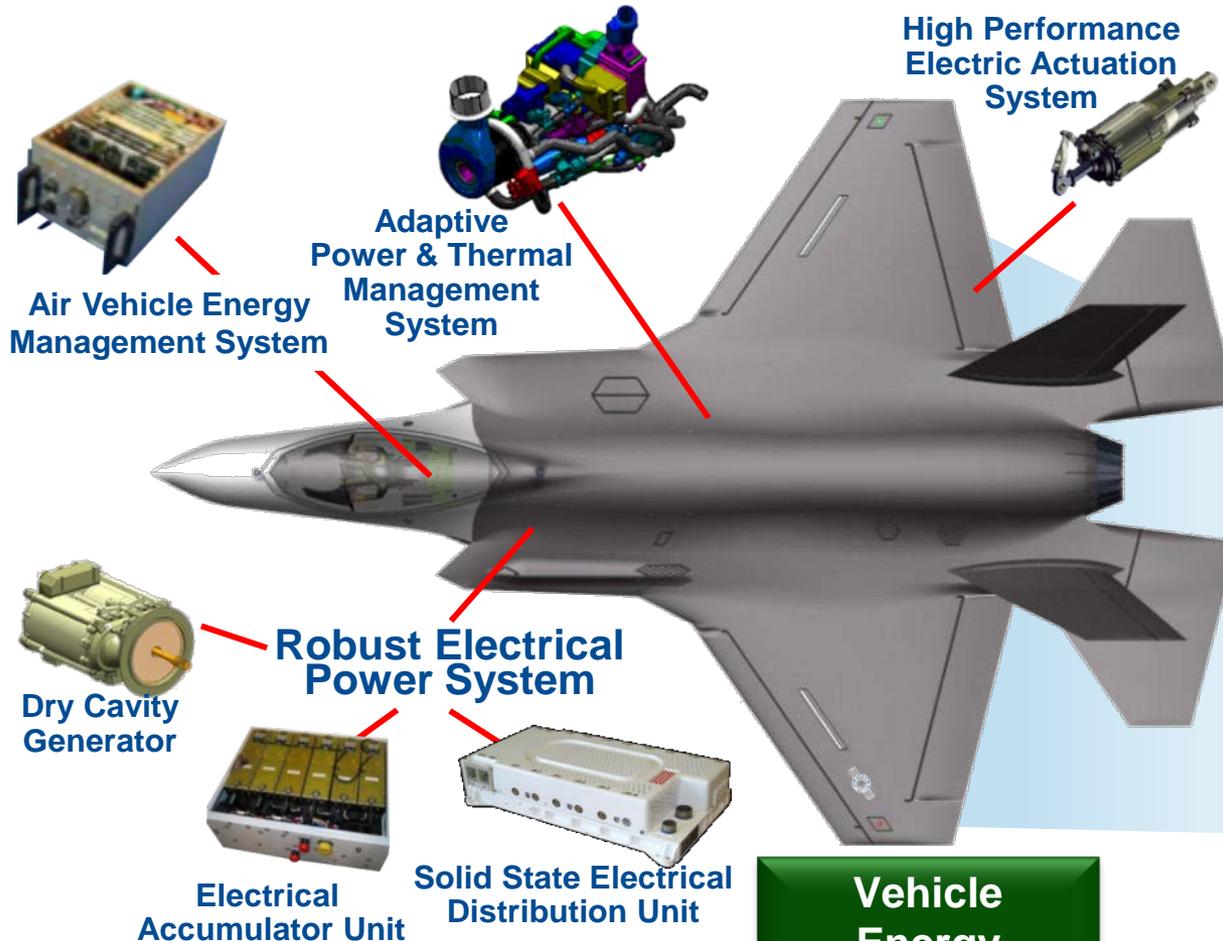
Turbine Engines

Space and Missile Propulsion





INVENT Addresses Aircraft Integration & Energy Optimization



INVENT Integrates Hardware From S&T & Other Sources

F-35/F-X Tip to Tail Modeling For Energy Optimization

