



NASA Human Spaceflight Overview

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Topics

- Personal Background
- JSC Engineering Overview
- Space Shuttle Program
- International Space Station
- Constellation Program
- Employment Opportunities



Personal Background

- Grew up in Bartlesville, OK
- Education: BSEE, 1979; MSEE, 1980 – OSU
- Began work for NASA in August, 1980
- Family: Married and have three girls (22, 20, 18)
- Hobbies include sports, camping, fishing, do-it-yourself projects



Go Pokes!





Recognize anyone in
these pictures??

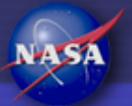


Married on July 26, 1980



Personal Background

- My career at NASA began when I was in grade school inspired by the Apollo Program and landing a man on the moon
- This carried on into high school and watching NASA build its first Space Station, Skylab
- Given my interest in the emergence of computer applications and math, I gravitated toward a EE degree
- Having the choice between OU and OSU for schools, OSU was the obvious Engineering School of choice
- My interest in NASA and Space continued through my college years which led to an on campus interview with the NASA Johnson Space Center (JSC)
- I then joined the JSC Engineering Directorate in August, 1980



ENGINEERING HUMAN SPACEFLIGHT



EA | ENGINEERING
DIRECTORATE

Johnson Space Center

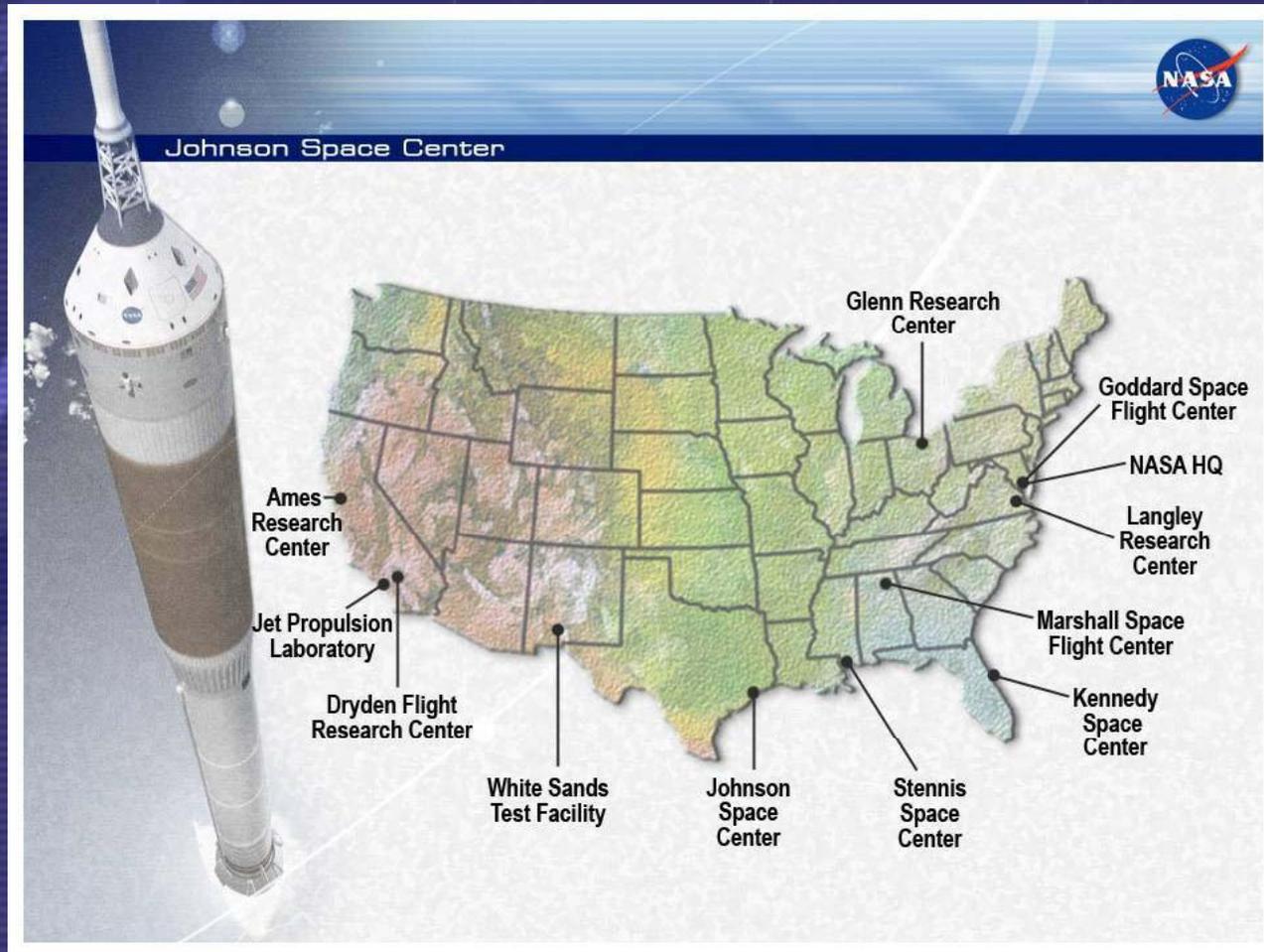


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NATIONAL AERONAUTICS
AND SPACE ADMINISTRATION



Teamwork – Key to a Successful Space Program





JSC Engineering Organization



EA/ENGINEERING DIRECTORATE

Stephen J. Altemus, Director
Steve Poulos, Deputy Director
Beth Fischer, Associate Director

BH/PROJECTS PROCUREMENT OFFICE

Delene Sedillo, Manager

- Manage Engineering's Acquisition Activities

LE/ENGINEERING RESOURCES MANAGEMENT OFFICE

David J. Westfall, Manager

- Manage Engineering's Business Resources Activities
- Oversight of Engineering's Support Contractors

EA2/ENGINEERING SERVICES & MANAGEMENT INTEGRATION OFFICE

Linda K. Bromley, Manager

- Information Technology Group
- Systems Engineering Group
- Management Integration Group

EA3/SYSTEMS ARCHITECTURE & INTEGRATION OFFICE

W W. Guy, Manager

- Project Management Office
- Advanced Development Office
- Vehicle Systems Engineering & Integration Branch
- Design & Development Branch
- Test & Fabrication Branch
- Biomedical Systems Branch

EA4/PROGRAM ENGINEERING INTEGRATION OFFICE

Irene E. Kaye, Manager

- Space Shuttle Group
- International Space Station Group
- Constellation Group
- GFE/Flight Crew Equipment & Safety Group

EC/CREW AND THERMAL SYSTEMS DIVISION

Patricia A. Petete, Chief

- Thermal Systems & Engineering Support Branch
- Life Support & Habitability Systems Branch
- Systems Test Branch
- Spacesuit Systems Branch
- Flight Program Support Branch
- EVA Tools & Equipment Branch

EG/AEROSCIENCE AND FLIGHT MECHANICS DIVISION

David B. Kanipe, Chief

- GN&C Development & Testing Branch
- Applied Aerospace & Computational Fluid Dynamics Branch
- Integrated GN&C Analysis Branch
- Flight Mechanics & Trajectory Design Branch
- GN&C Autonomous Flight Systems Branch

EP/ENERGY SYSTEMS DIVISION

William Hoffman, Chief

- Energy Systems Integration Office
- Energy Conversion Systems Branch
- Propulsion Systems Branch
- Power Systems Branch
- Energy Systems Test Branch

ER/AUTOMATION, ROBOTICS, AND SIMULATION DIVISION

R. Matthew Ondler, Chief

- Intelligent Systems Branch
- Flight Robotics Systems Branch
- Robotic Systems Technology Branch
- Dynamic Systems Test Branch
- Special Projects Branch
- Simulation & Graphics Branch

ES/STRUCTURAL ENGINEERING DIVISION

Edgar Castro, Chief

- Structures Branch
- Thermal Design Branch
- Materials & Processes Branch
- Mechanical Design & Analysis Branch
- Loads & Structural Dynamics Branch

EV/AVIONIC SYSTEMS DIVISION

Pat Pilola, Chief
Greg Blackburn, Deputy Chief
Mike Conley, Deputy Chief

- Operational Space Systems Support Branch
- Exploration Space Systems Integration Branch
- Project Mgmt & Institutional Systems Office
- Electronic Design Branch
- Integration Test Facilities Branch
- Electromagnetic Systems Branch
- Specialty Engineering Branch
- Systems Planning, Analysis & Eval Branch



JSC Engineering's Core Ideology

- We exist to provide essential engineering for the advancement of human space exploration
- In doing so, we grow premier engineers and technical leaders and extend our expertise to improve the global community

... *be curious, critical, and credible in our thinking*

... *upon identifying a problem, always present a solution or commitment to find one*





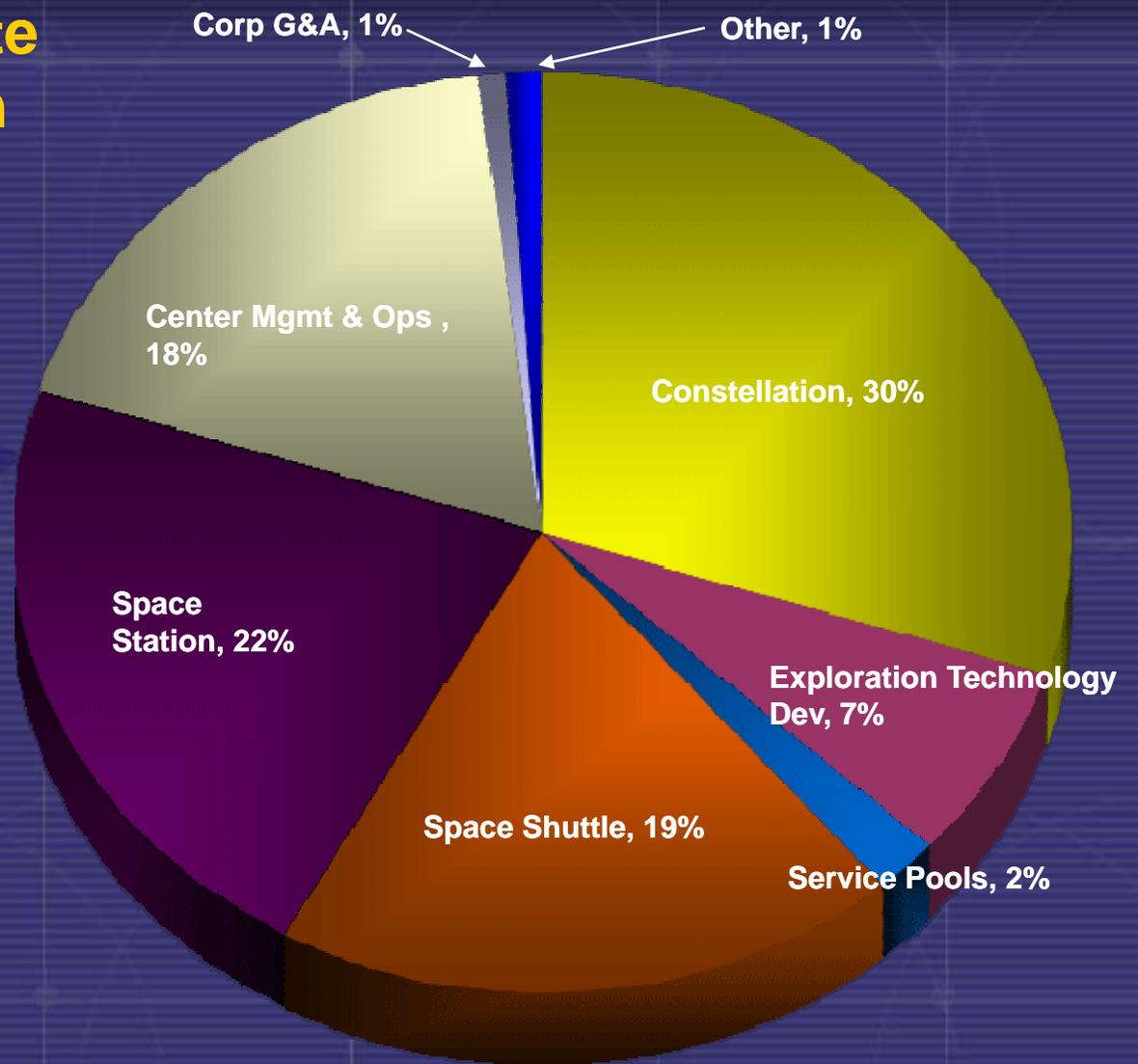
JSC Engineering Video – an introduction to what we are about

Click to Start Video



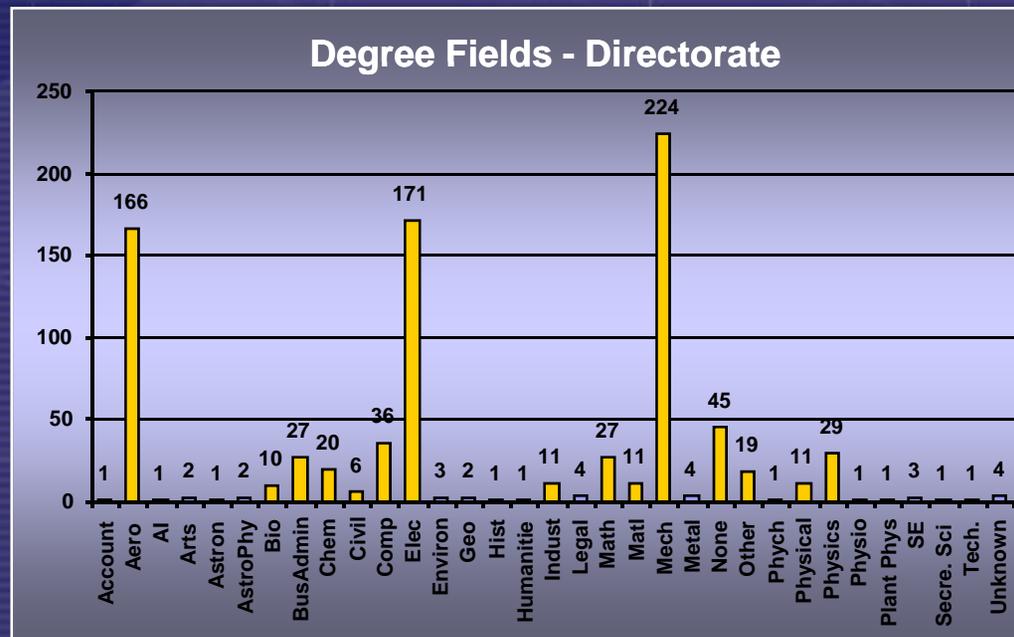
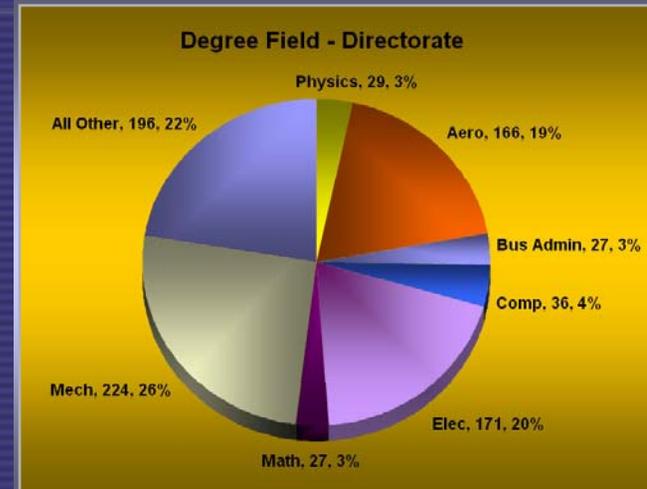
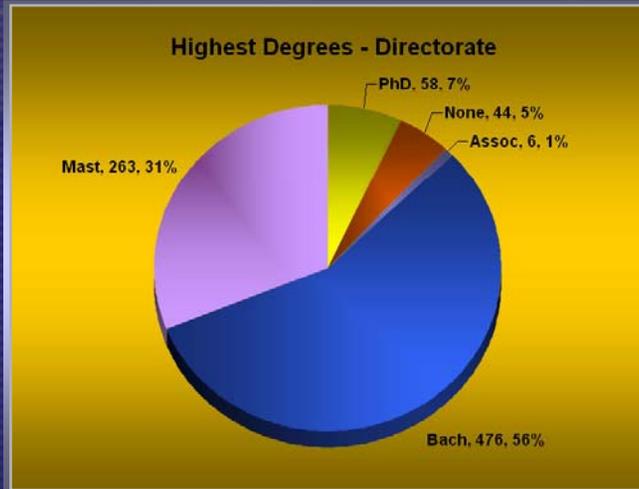


Engineering Directorate Workforce Distribution



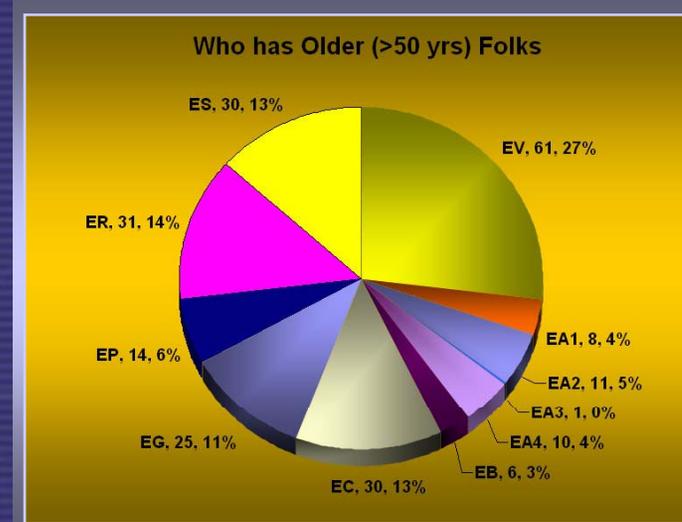
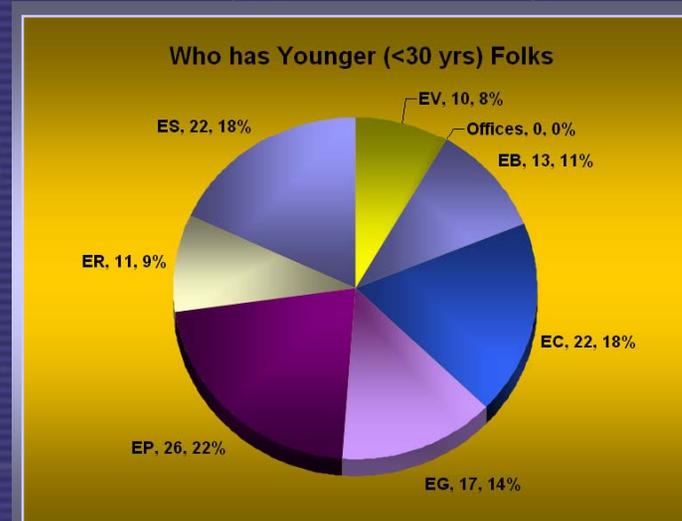
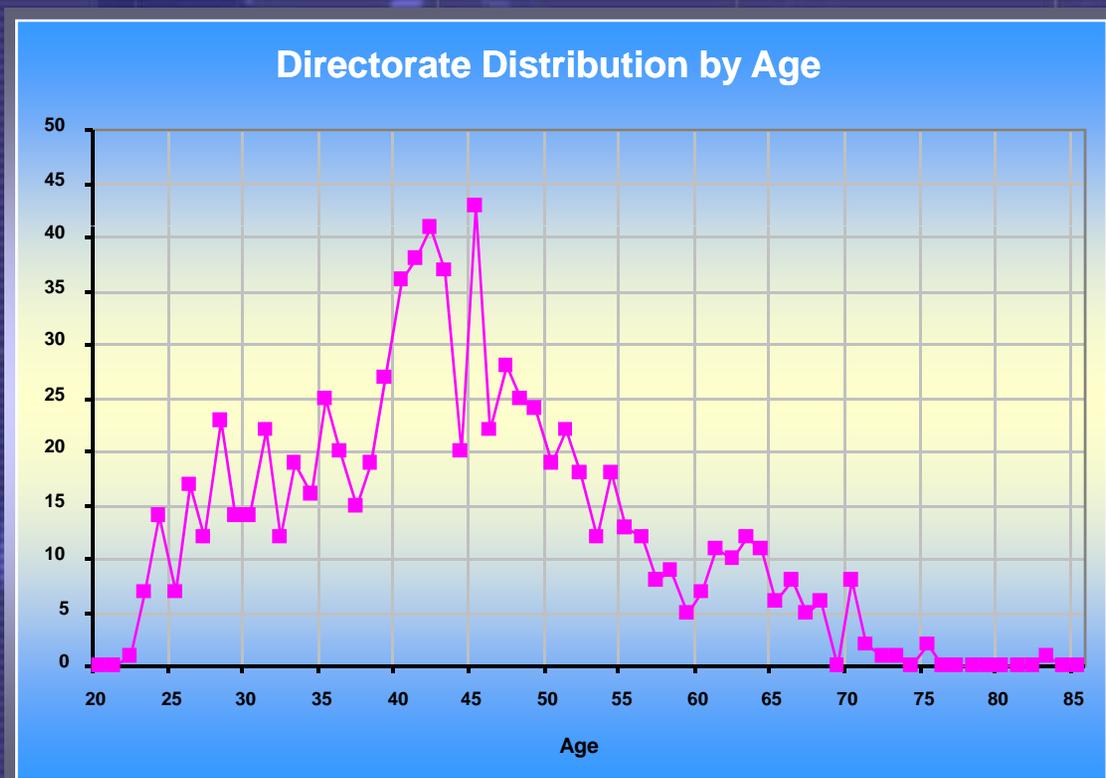


Engineering Directorate Degree Fields





Engineering Directorate Distribution by Age





Current Human Space Flight Programs

- Space Shuttle Program (SSP)
- International Space Station (ISS) Program
- Constellation Program (CxP)



Space Shuttle Program Overview

[Click to Start Overview](#)





Space Station Program Overview

[Click to Start Overview](#)





Constellation Program Overview

[Click to Start Overview](#)





Employment Opportunities

- JSC Co-op Program
 - ❖ The Cooperative Education Program at Johnson Space Center is open to graduate and undergraduate students from around the country.
 - ❖ As a Co-op, you will regularly alternate semesters at school with semesters at JSC working in a paid, full-time position directly related to your field of study.
 - ❖ This supplements lessons learned at school and gives valuable real-world experiences you won't get in a classroom!
 - ❖ More info: <http://coop.jsc.nasa.gov/>
- NASA JSC Coops in Action as captured on YouTube “Apollo Guys”:
 - ❖ <http://www.youtube.com/watch?v=sltKDSf0xl8&feature=PlayList&p=F B658BDA62C8D831&index=0>
- JSC Education and Student Programs opportunities:
 - ❖ <http://education.jsc.nasa.gov/students.cfm>





Other Informational Links

- **NASA.gov:**
 - ❖ <http://www.nasa.gov/home/>
- **NASA Johnson Space Center:**
 - ❖ <http://www.nasa.gov/centers/johnson/home/index.html>
- **NASA Multimedia Site:**
 - ❖ <http://www.nasa.gov/multimedia/>
- **NASA TV:**
 - ❖ <http://www.nasa.gov/multimedia/nasatv/index.html>
- **NASA Human Spaceflight:**
 - ❖ <http://spaceflight.nasa.gov/home/index.html>
- **Spacecraft Sighting Opportunities:**
 - ❖ <http://spaceflight.nasa.gov/realdata/sightings/index.html>
- **Astronaut Biographies:**
 - ❖ <http://www.jsc.nasa.gov/Bios/index.html>



“WE LEAVE AS WE CAME, AND GOD WILLING, AS WE SHALL RETURN,
WITH PEACE AND HOPE FOR ALL MANKIND”

EUGENE CERNAN,
COMMANDER OF THE LAST APOLLO MISSION

December, 1972

