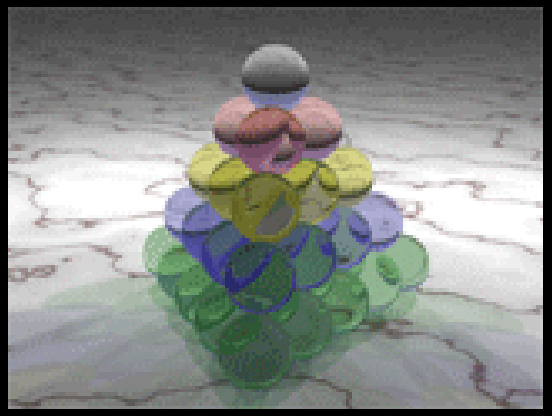
The Project Academy:

Re-Energizing Project Management



Click the orange text throughout for links

Dr. Ed Hoffman

NASA Academy of Program/Project & Engineering Leadership

http://appel.nasa.gov

A Thought Experiment

1. Imagine the entire history of the universe as a single year beginning on January 1 and running through today (December 31, 11:59:59).

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

2. Figure out the hypothetical dates for the following events
   A. Creation of the earth and other planets of solar system
   B. Emergence of first dinosaurs
   C. Emergence of “anatomically modern” humans

(credit: Carl Sagan, *Cosmos*)

The Quest of Hubble

to expand our understanding of the universe

Watch video of Hubble.

(Click center to play)

http://appel.nasa.gov

The Way We Work…

"It takes exactly the same skill set people will need more of in the future to collaborate on work projects."

Rob Carter,
CIO of Fed Ex,
on learning from
"World of Warcraft"

(*Time*, May 25, 2009)

…is Changing

Project Academies Gaining Popularity

A world shortage of top class managers to run increasingly complex projects and programmes, and the requirement by project-led companies for consistent standards across worldwide activities, is fuelling a global trend for organisations to develop talent through their own internal academies. **Rick Waghorn** reports.

Source: *Project* (Association for Project Management, UK)

Defining the Universe of Complex Projects

	Complex Project-Based Organization	*Functional Organization*
Problems	**Novel**	Routine
Technology	**New/invented**	Improved/more efficient
Team	**Global, multidisciplinary**	Local, homogeneous
Cost	**Life cycle**	Unit
Schedule	**Project completion**	Productivity rate
Customer	**Involved at inception**	Involved at point of sale
Survival skill	**Adaptation**	Control/stability

Further reading: Mike Hobday, "The project-based organization: an ideal form for managing complex products and systems?"

Project-Based Environment

Strengths

- Adaptable to changing circumstances
- Customer orientation
- Focus on product, not organization
- Multidisciplinary teams

Weaknesses

- Diffuse authority / lack of direct control
- Tunnel vision
- Organizational cohesion
  - Decentralized learning
  - Knowledge sharing across community

Increasing Project Complexity

PROGRAMMATIC

Budget

Contractual

Schedule

Sustained commitment

TECHNICAL

Interfaces/systems engineering

Technological readiness

One-of-a-kind systems

Harsh environment

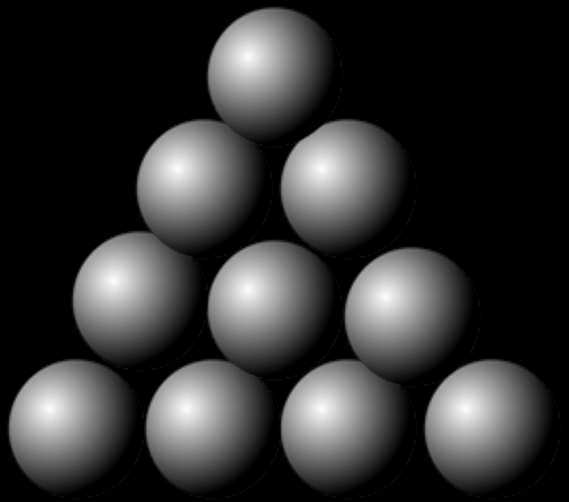
Software

Long operational lifetimes

Unique test facilities & eqpt.

High performance requirements

It has to work the first time



PEOPLE

Recommended reading:
Mike Ryschkewitsch, Dawn Schiable, and Wiley Larson, "The Art and Science of Systems Engineering"

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(adapted from Vern Weyers, 2006)

A New Way of Thinking and Learning

To cope with a challenging world,
any entity must develop the capacity of
shifting and changing—
of developing new skills and attitudes;
in short the capacity of learning.

Arie De Gues, *The Living Company*

Project Management & Project Leadership

YESTERDAY

- Defined Hierarchy
- Command & control
- **Management**
  - Cost
  - Schedule
  - Technical performance

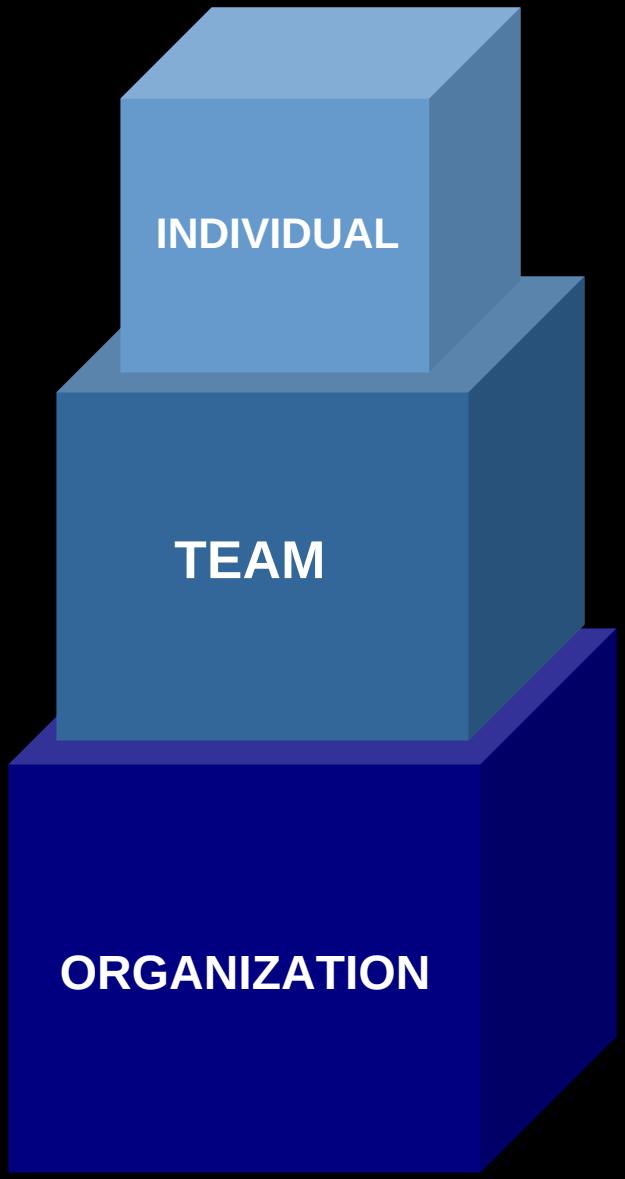
TODAY

- Limited authority
- Cross-sector partners
- Flat organization
- **Leadership**
  - Cost
  - Global supply chain
  - Rapid technology insertion
  - Schedule
  - Technical Performance

Dimensions of Effectiveness

http://appel.nasa.gov

Meeting Multiple Needs



COMPETENCIES

PROJECT SUCCESS

SUSTAINABILITY

Why a Project Academy at NASA?

To help transform NASA's project-based environment into a learning organization

Challenger accident

1986

Mars failures

1999

Columbia accident

2003

"NASA's current organization…
has not demonstrated the characteristics of a learning organization."
Columbia Accident Investigation Board Report

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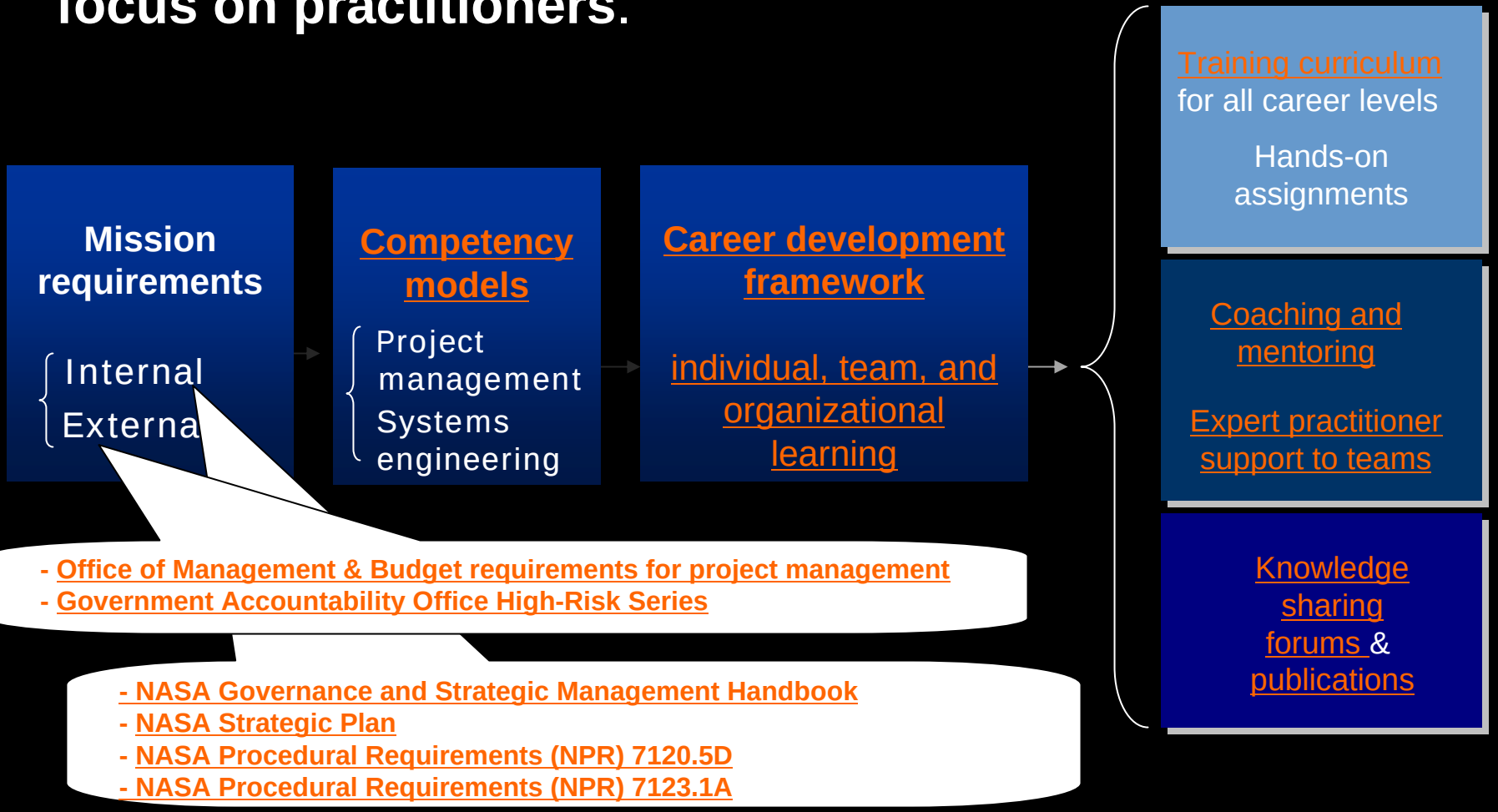
Key Assumptions and Biases

- Practitioners know best.
- 85-90% of learning takes place on the job.
- Learning is contextual — different career stages have different requirements.
- Optimal performance and learning come together at the team level.

Align and Focus

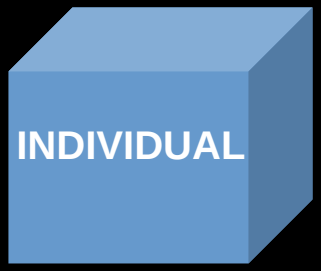
Align with organizational strategy, focus on practitioners.



Individual, Team, Organization

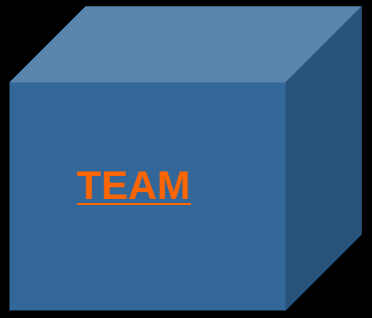
APPROACH

ACTIVITIES



- **Training curriculum**
- **Hands-on opps.**

- core curriculum for 4 career levels
- in-depth offerings in subject areas
- competitive selection for hands-on opportunities



Direct support to project teams

- online assessments
- workshops
- mentoring and coaching
- expert practitioners
- team building and process support

Knowledge sharing

- forums for project managers, systems engineers, and principal investigators
- publications
- case studies
- communities of practice

http://appel.nasa.gov

Final Chapter of Hubble's Quest

(Click center to play)

http://appel.nasa.gov

Closing Thought

Project academies help organizations learn

and acquire knowledge that will enable them

to succeed at the grand challenges of our times.