Organizational Effectiveness

Dr. Anne Black
Human Factors and Risk Management
Rocky Mountain Research Station

Strategic Plan Portfolio: Social Fire Science

Element 3 – Organizational Effectiveness:

Develop knowledge, approaches, and tools to improve the organizational effectiveness of fire management programs.

- Optimal fire management programs
- Human factors in fire management
- Fire management decision-making

Optimizing

- Develop [**Econometric**] timizing
- Understa [ ] ms
- How changing allocations affect objectives

Human factors

- Evaluate ro [**Behavioral, Ecological**] dynamics
- Identify eff [ ] prove
  science ap [ ] refighter
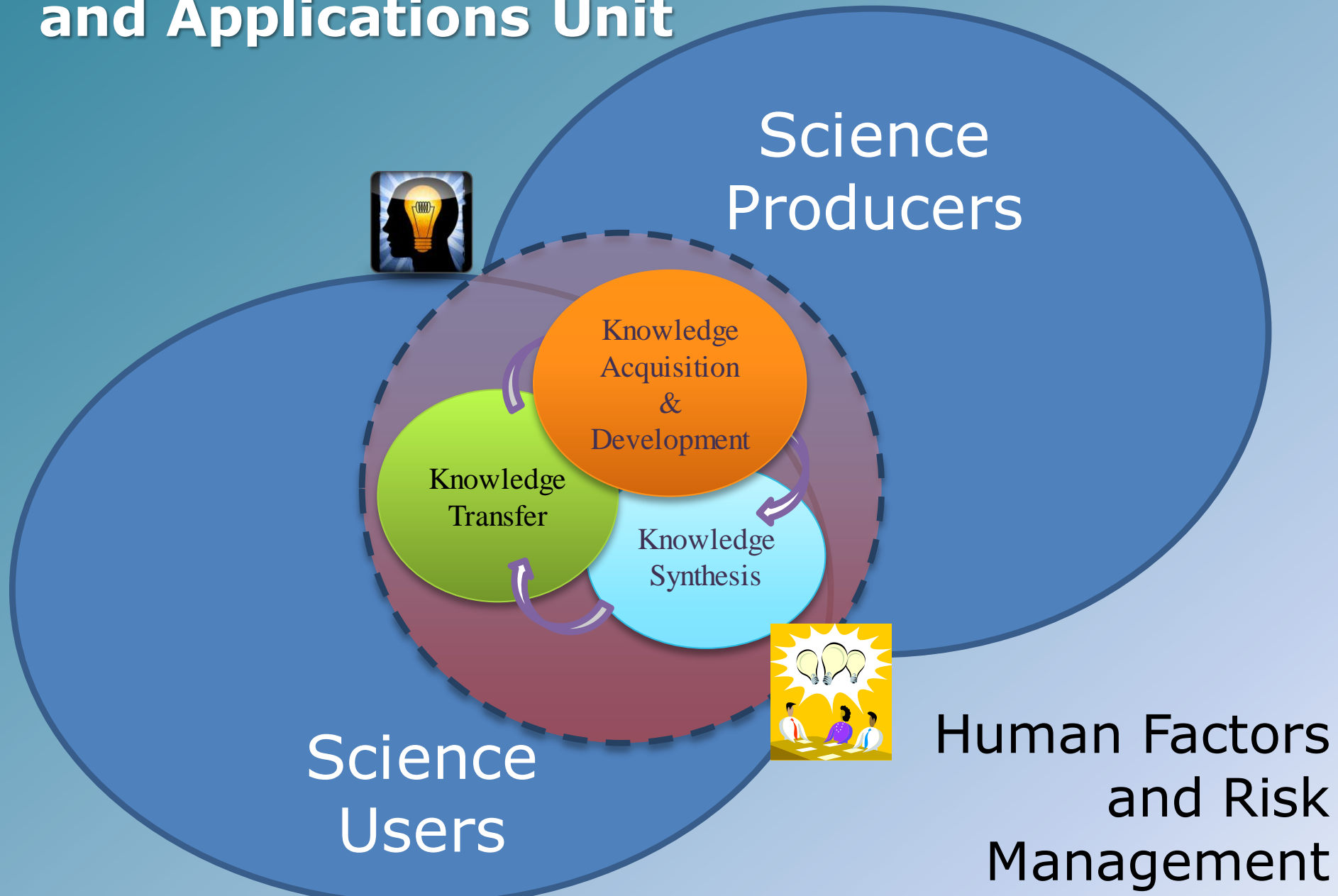 safety

Decision making

**Econometric
Decision support - WFDSS**

Human factors

- Evaluate role of individual psychology, group dynamics
- Identify effective tools and approaches to improve science application, decision-making and firefighter safety

❖ Broad overview of work
                      (Who we are, what we do)

❖ Existing capabilities and partnerships
                      (How we work, who we work with)

❖ Identify opportunities for the future
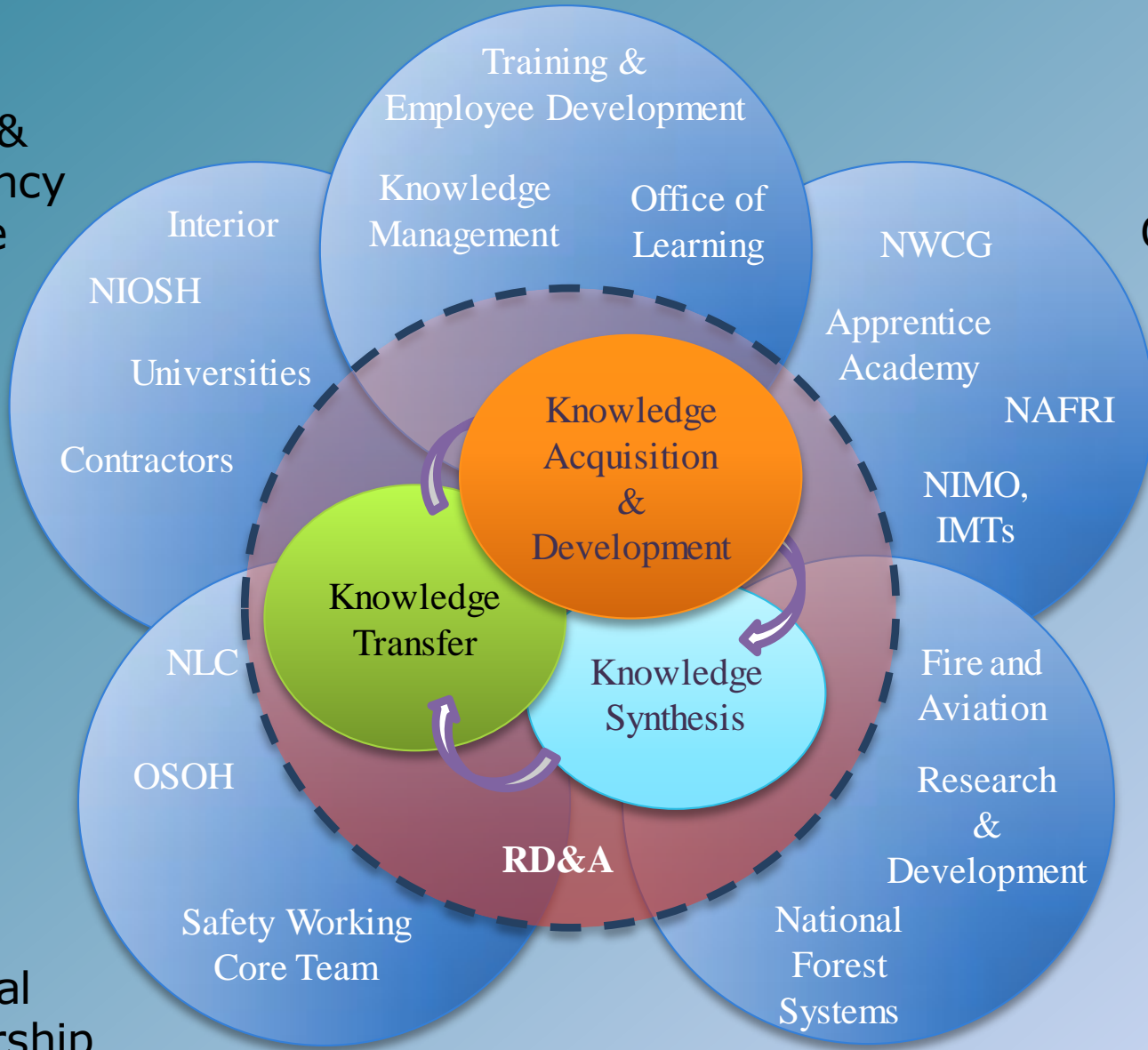   (capitalizing on strengths, closing gaps)

Research, Development and Applications Unit

Science Producers

Human Factors and Risk Management

Knowledge Acquisition & Development

Knowledge Transfer

Knowledge Synthesis

Science Users

Internal Training, Learning

External & Interagency Expertise

Fire Training, Operations

Internal Leadership

Internal Functional

Training & Employee Development

Knowledge Management

Office of Learning

Interior

NIOSH

Universities

Contractors

NWCG

Apprentice Academy

NAFRI

NIMO, IMTs

Knowledge Acquisition & Development

Knowledge Transfer

Knowledge Synthesis

NLC

OSOH

Safety Working Core Team

Fire and Aviation

Research & Development

National Forest Systems

RD&A

Structure

- Small internal team
- Operational and academic expertise
- Able to identify potentially useful concepts
- Bring expertise into organization short-term to more fully develop – awareness, knowledge, skills
- Project duration teams -inter-agency, inter-functional, cross hierarchical

A Model of
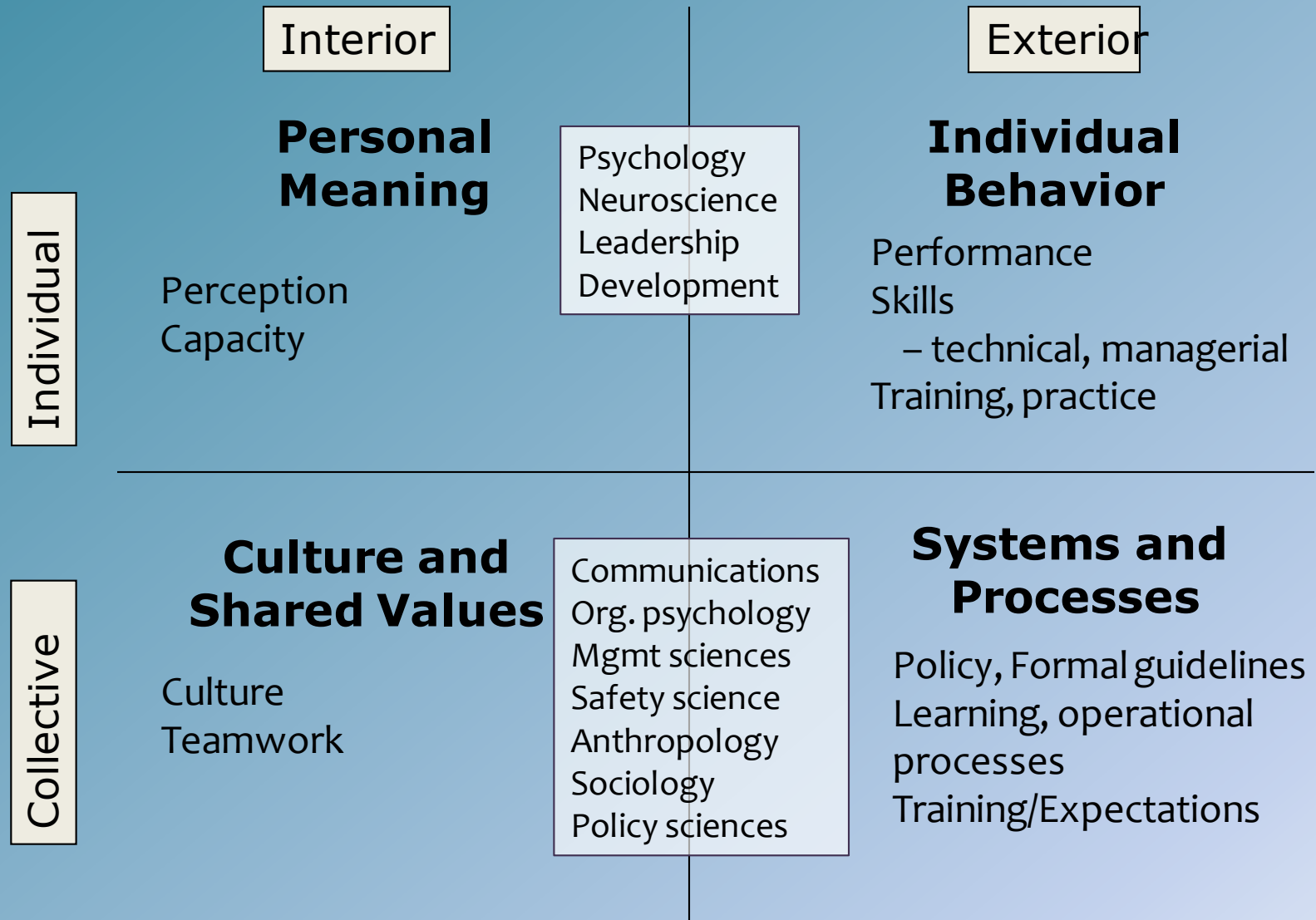# Human Performance and Resilience
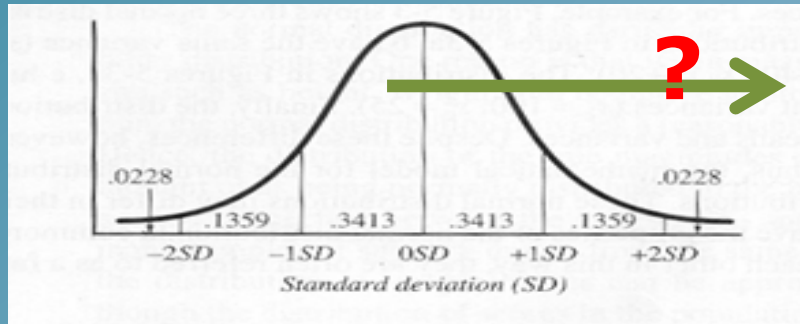
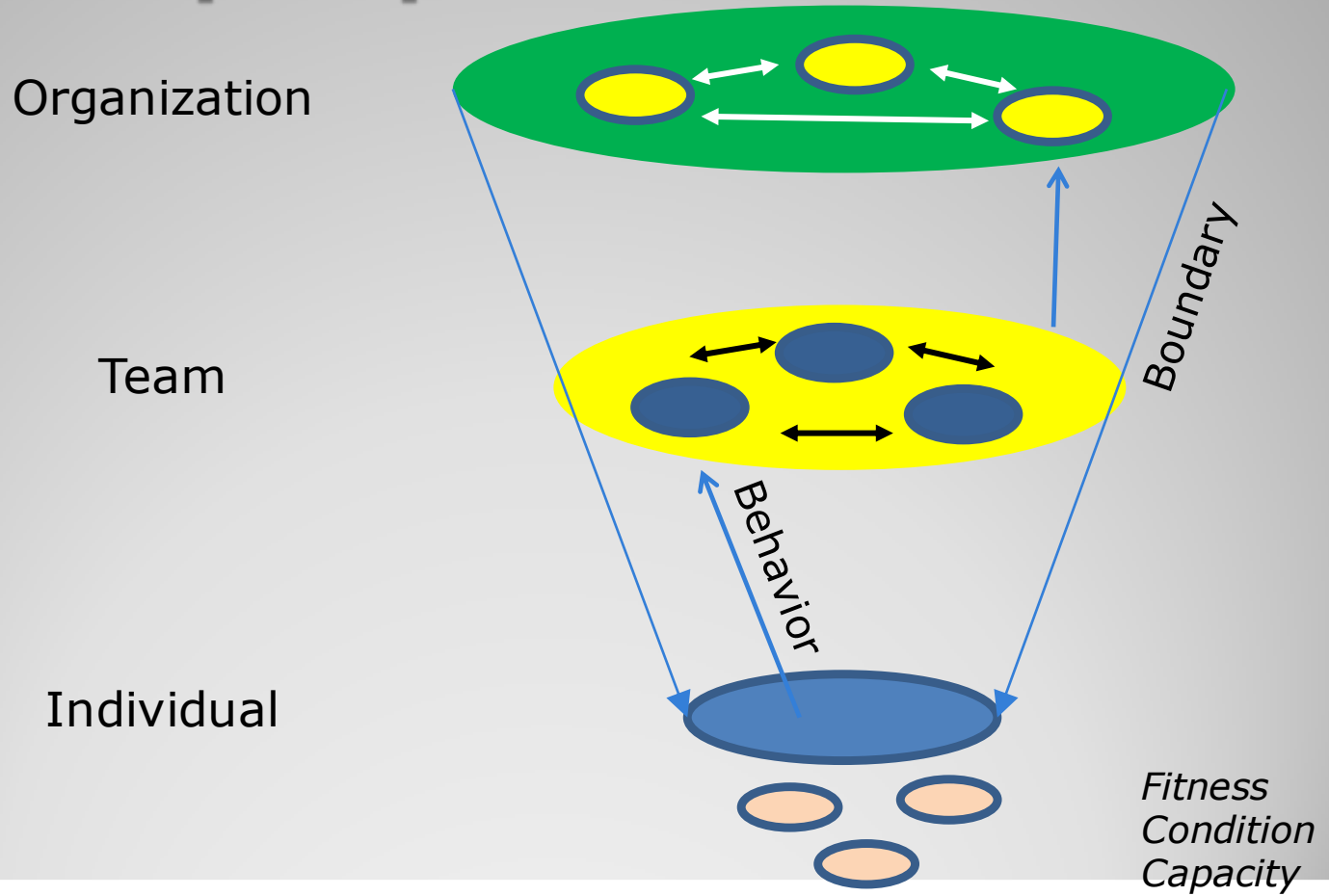**Impairment**

Elite

Depression   Anxiety   Fatigue   'Normal'   Focused

Theoretical Framing: Trans-disciplinary

Interior

Exterior

Individual

Personal Meaning

Psychology
Neuroscience
Leadership
Development

Individual Behavior

Perception
Capacity

Performance
Skills
   – technical, managerial
Training, practice

Collective

Culture and Shared Values

Communications
Org. psychology
Mgmt sciences
Safety science
Anthropology
Sociology
Policy sciences

Systems and Processes

Culture
Teamwork

Policy, Formal guidelines
Learning, operational processes
Training/Expectations

Multi-scale Ecological systems perspective

Organization

Team

Individual

Boundary

Behavior

Fitness
Condition
Capacity

Human Performance spectrum

Impairment

Elite

Depression Anxiety Fatigue 'Normal' Focused

Preparation & Recovery

What is the responsibility,
opportunity to help
prepare, respond, recover?

Performance: Situational Awareness - What is possible?
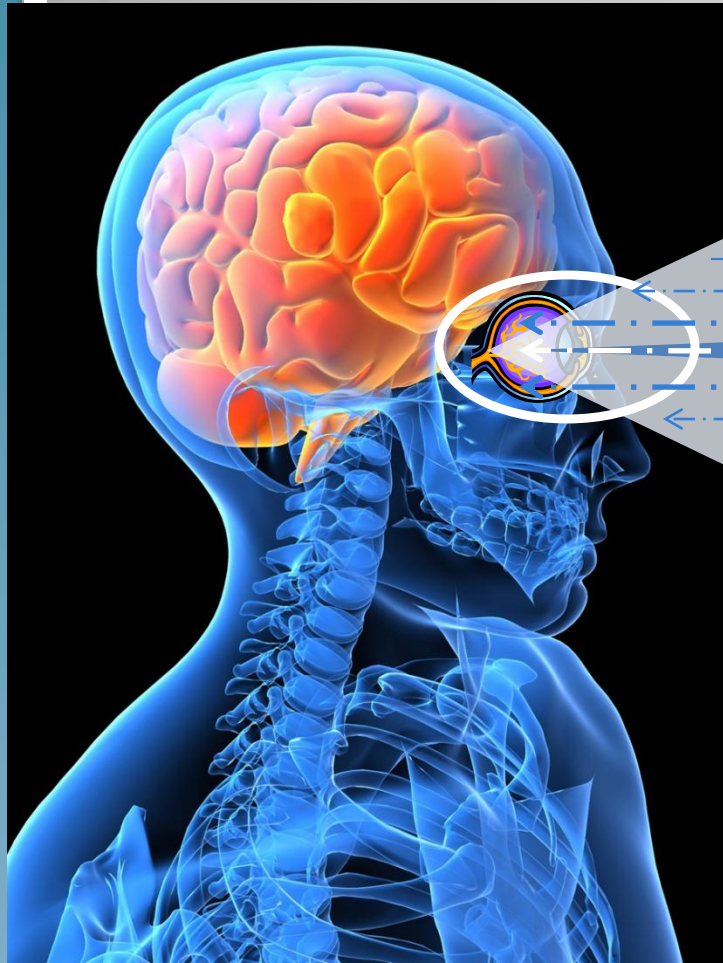
Foveal

Peripheral

Lots of mutually exclusive processes

Fast + **Slow**

System 1:

- Automatic
- Intuitive
- Instinctive
- Primary
- Rapid
- Blind
- "WYSIATI"

System 2:

- Considered
- Effortful
- Focused
- Secondary
- Slower
- Lazy

Social brain

Analytic brain

Learning

Implementing

source: www.arrow-capita

Individual and Team interactions

| Supervisor two-way communication | → .81 → | Supervisor promote interdep. | → 75 → | Expertise over rank |

.82

Generates complex thinking

.85

| Strong Group Culture (ground rules) | → .64 → | Reflection & Integration |
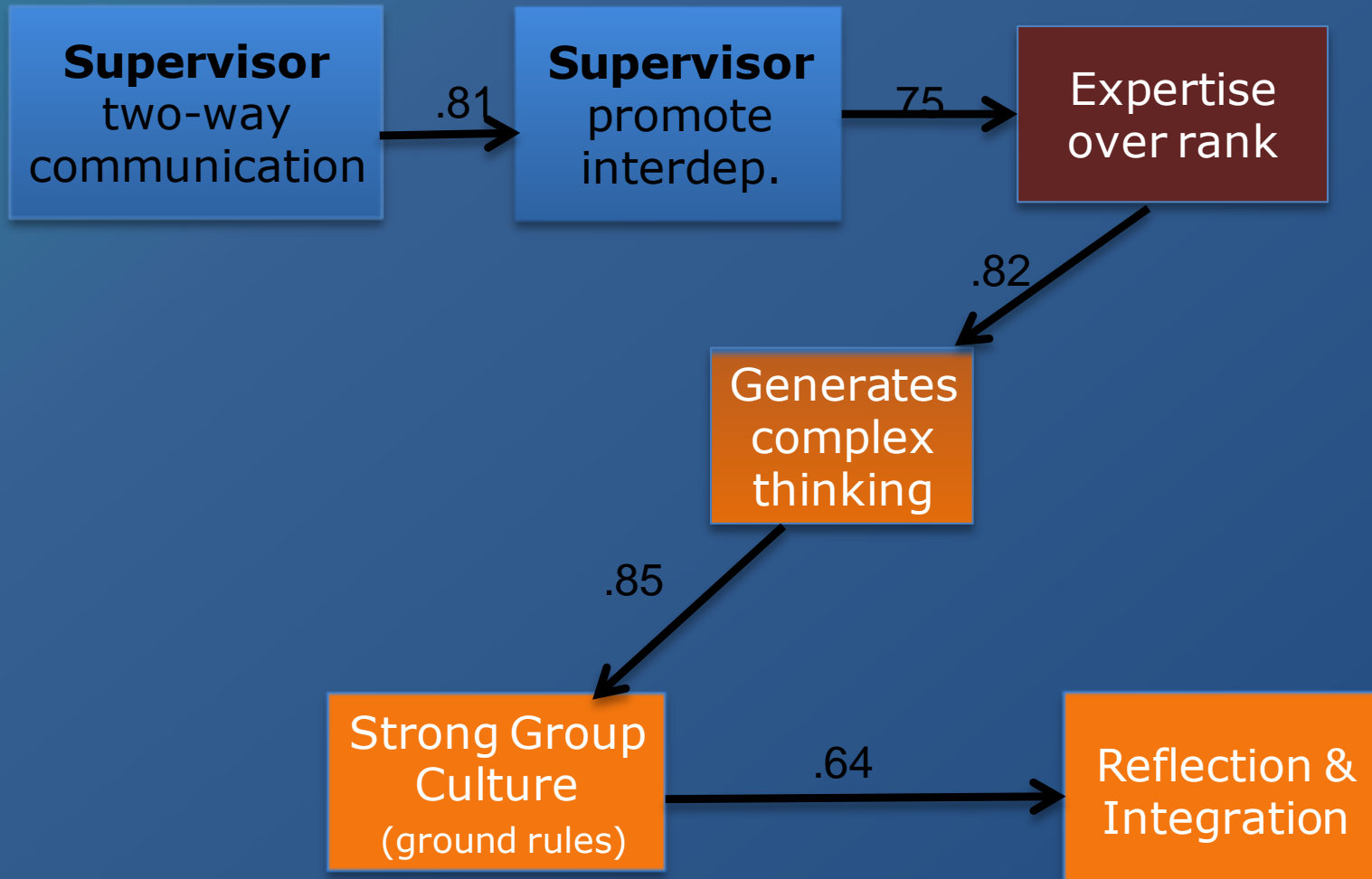
Learning

Two communication modes

Supervisor two-way communication — .81 → **Supervisor** promote interdep. — 75 → Expertise over rank

Expertise over rank — .82 → Generates complex thinking

Expertise over rank → Big picture /Shared understanding

Generates complex thinking — .85 → Strong Group Culture (ground rules)

Strong Group Culture (ground rules) — .64 → Reflection & Integration

Big picture /Shared understanding → Clarity, Comfort

Performance: What is possible?
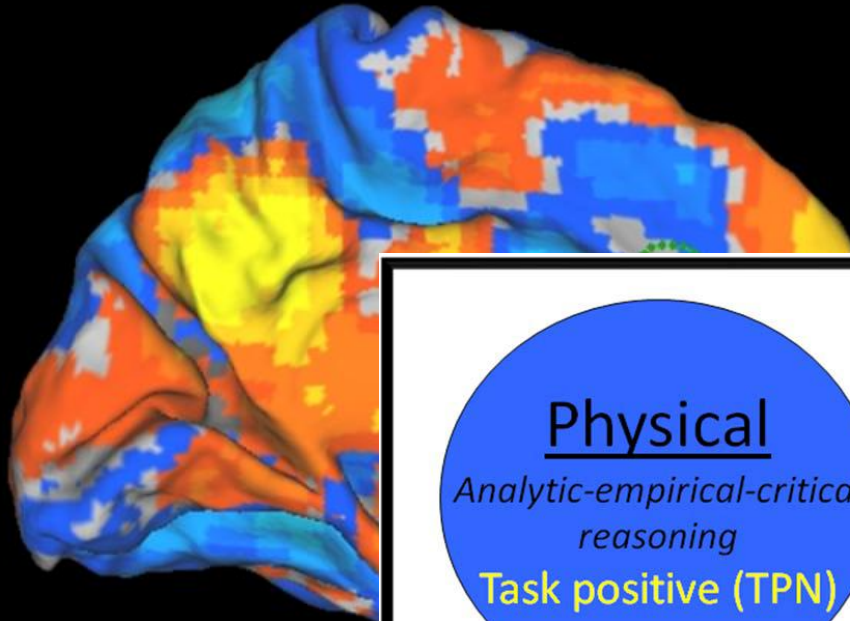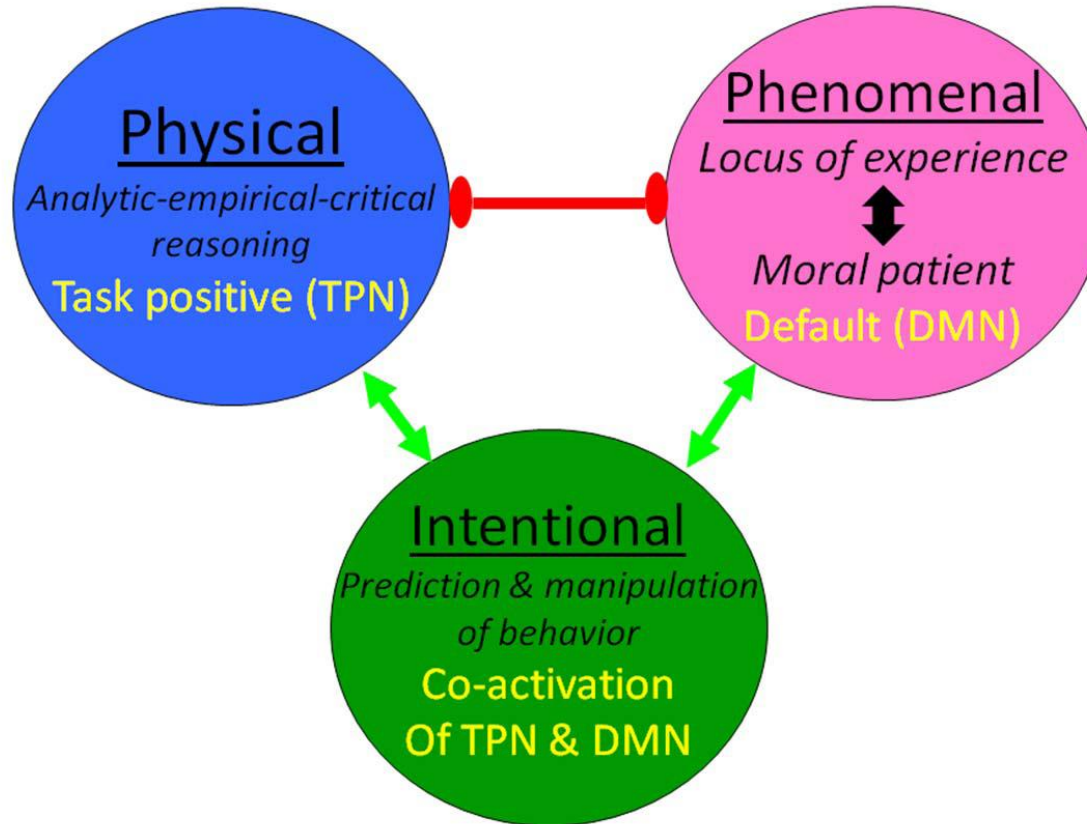
By position

Middle Positions (DIVS/TSKF/STRK) Less integrated

Dispatch/support More isolated

**First level crew (FFT2) Quite variable**

An Experiment in IM Decisions

- Learning from risk-based management

  ◦ How is risk management being integrated into decision making?

  ◦ How are decisions/outcomes aligned with leader's intent?

  ◦ What trade-offs are being made?

Common Interests:

Fire fighter safety
Financial efficiency/cost
Political climate
Community relations
Public safety
Values at risk
Ecological effects

Trade-offs:
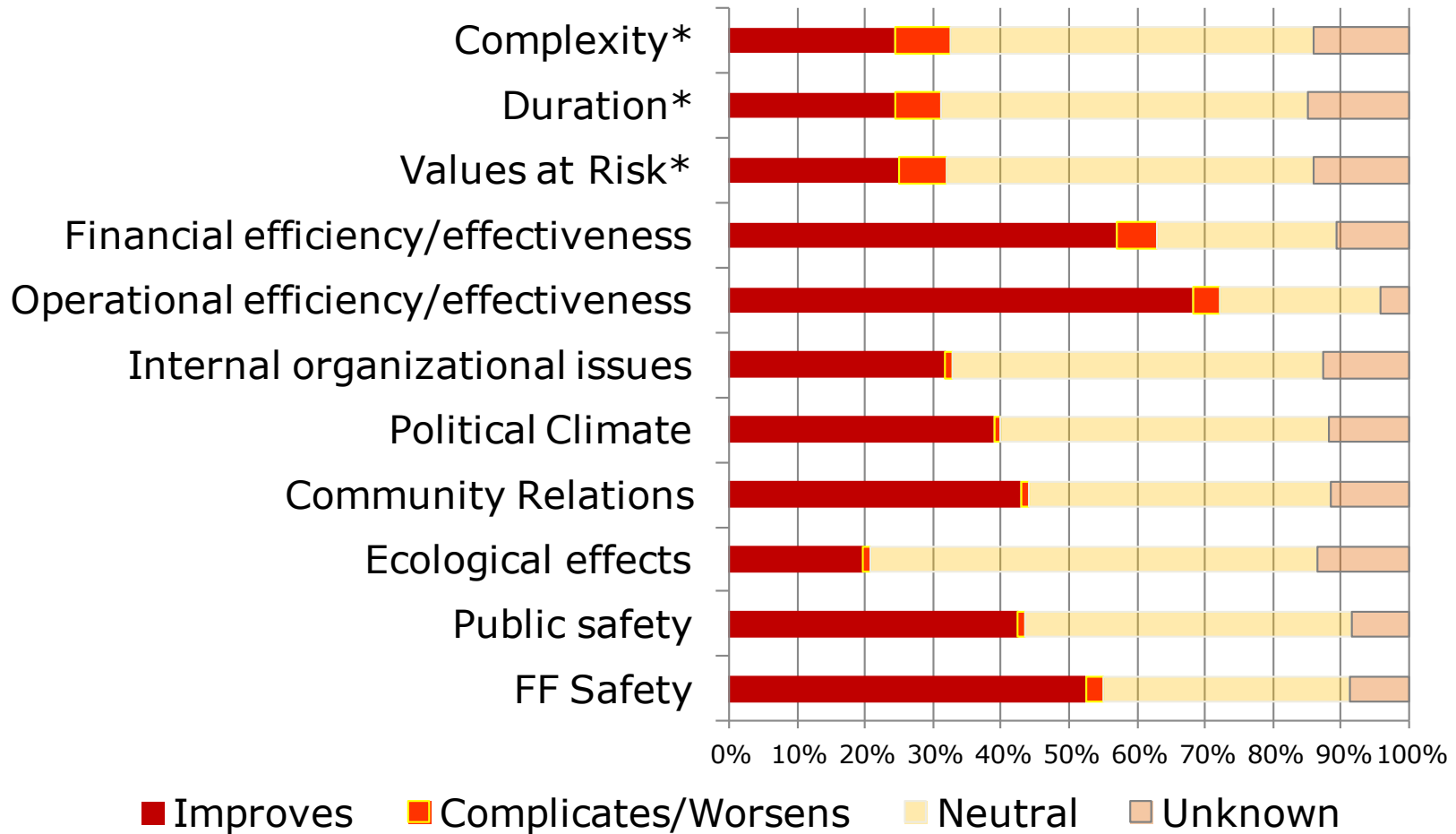
Opportunities – individual

➢ How effective (safe, resilient, high performing) can a human be?

- Where are we, how can we improve?

- Engage in new science partnerships to understand limits and potential
- Develop context-specific benchmark
- Identify/develop practices to hone capacity to prepare, respond, recover

Opportunities - collective

➢ How effective (safe, resilient, high performing) can a team be?
- What does high performance look like?
- What are our measure of success – multi-faceted
- How does our culture promote/impair strengths
- Where are we strong/weak?
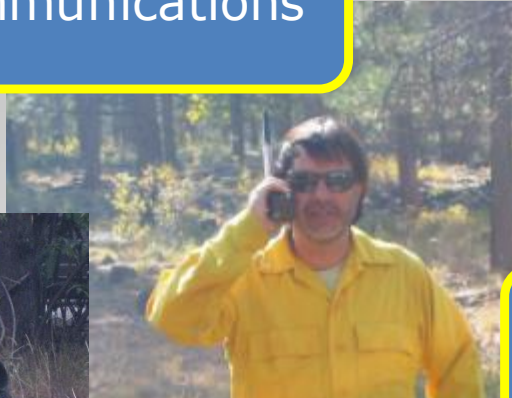- How are our current systems providing strengths, creating weaknesses and gaps?

➢ Benchmarking
- How do others slice and dice this?
- What do their lenses reveal/conceal that ours do not?

➢ Training
- How might we adjust what we're doing (training and practice) to improve?

Communications

Culture

Teamwork

Sense & Decision-making

Program of Work

- Build actionable understanding of human performance, resilience, and learning.

- Determine how to enhance resilience, comprehensive fitness

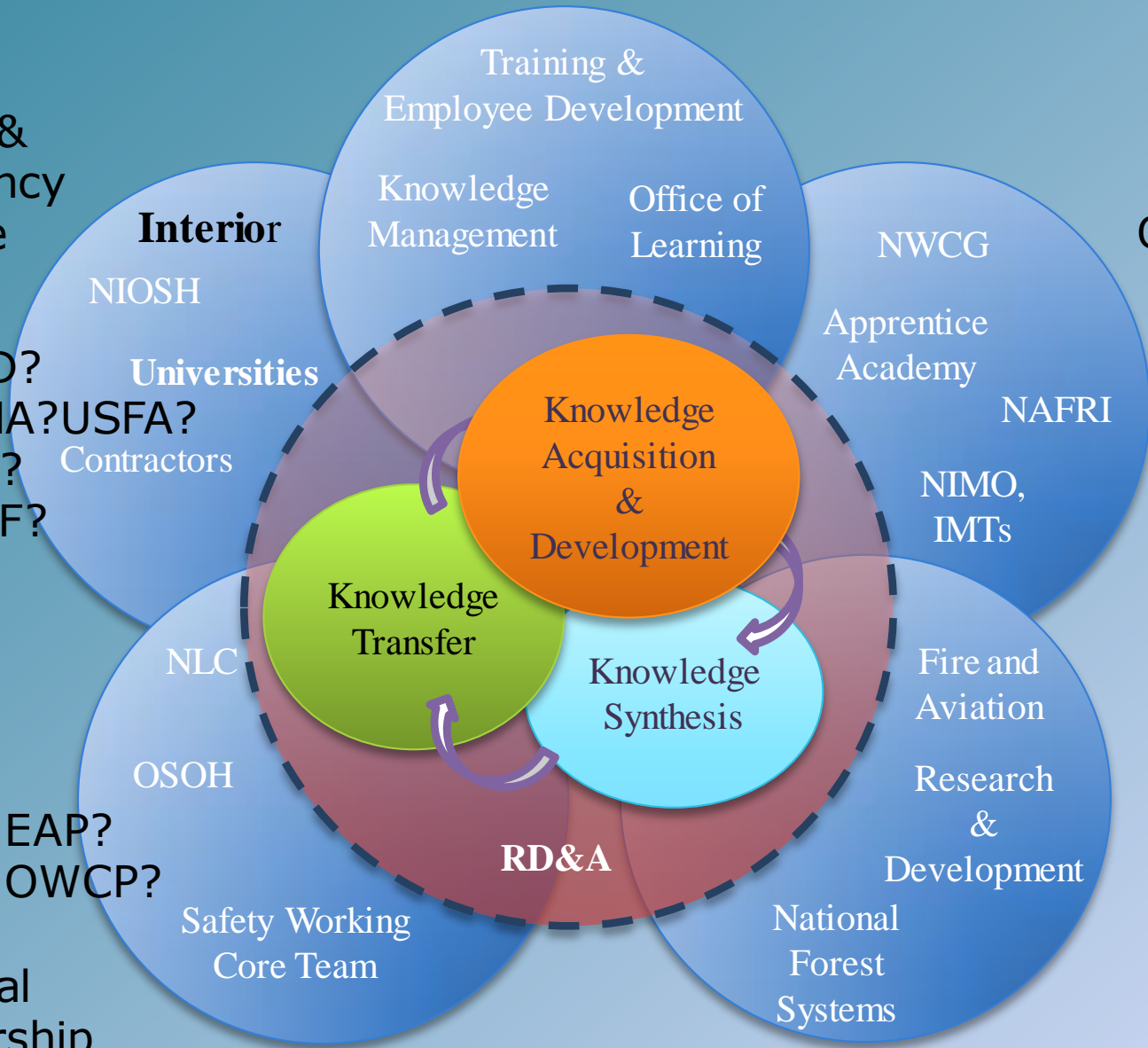- Integrate effective practices to transform agency culture.

Questions?