Ethics and Team Science

Considering Professional Development for Lab Environments

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NCPRE Creates Tools, Resources, and Programs To Advance Institutional Integrity

Leadership development programs and tools including AUDiT

Programs and tools for labs, their leaders and members

Assessment: SOURCE, CARES: environment information, benchmarking

Cultures of Excellence

Our premise is that excellence is more than *what* work is done, it also encompasses *how* work is done:

with rigor, reproducibility, inclusion, and integrity.

Today's complex problems
require effective collaboration.

Diversity in working groups leads to greater creativity and productivity...

especially for new, complicated, or difficult problems.

People and structures interact to create and maintain cultures of excellence.

Cultures that feature ethical professional conduct require attention to **everyday behaviors and interactions** *and* learning about responsible conduct of research.

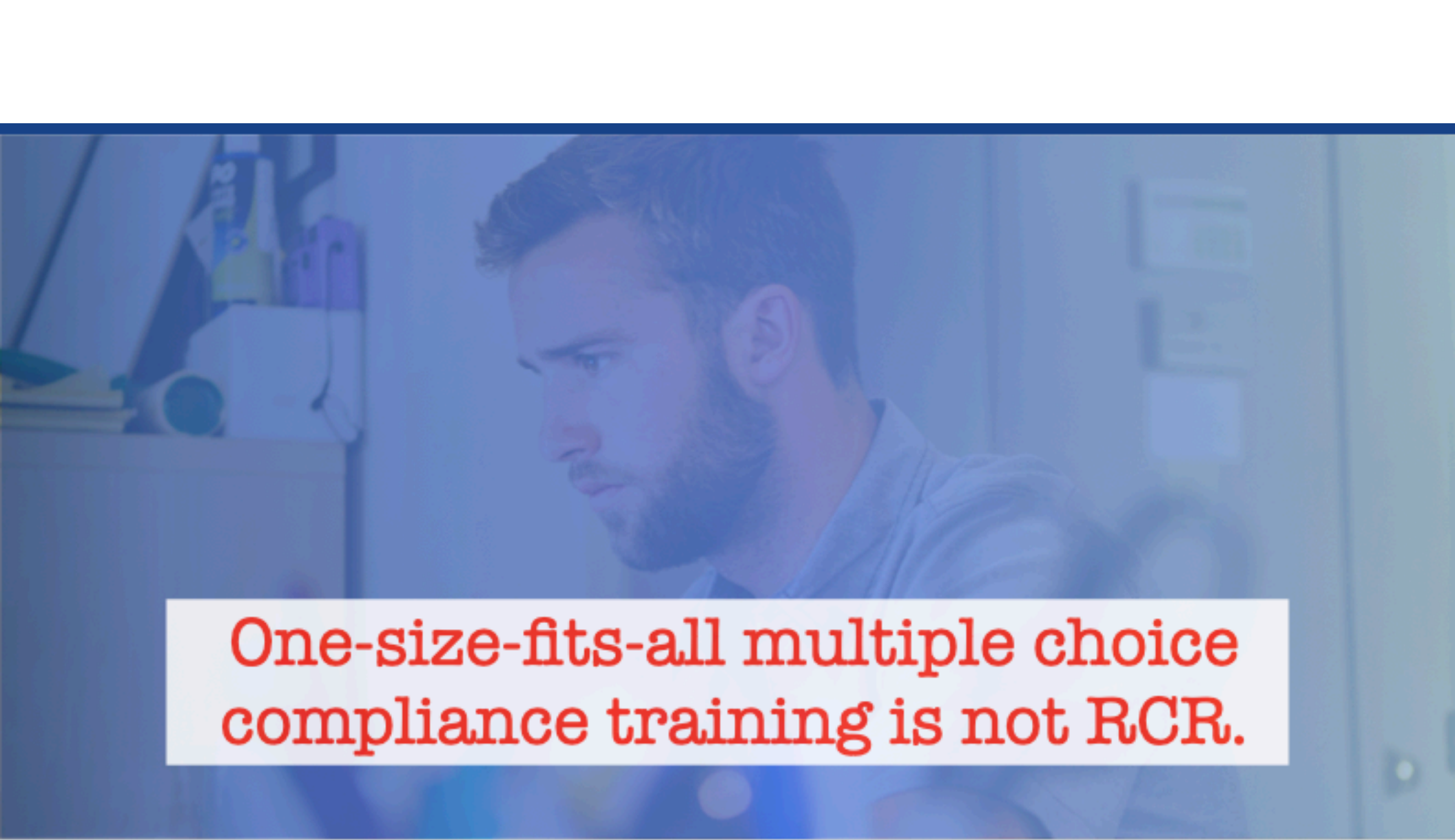# We know that people are influenced by the choices of those *around* them.

Challenges start early:

Students start in a research group, learn "how things are done" and develop a mental model of research.

They are typically dependent on advisor and funding, and most will adopt that model even when their sensibilities or other experience (RCR or other education) suggest a practice might be inappropriate.
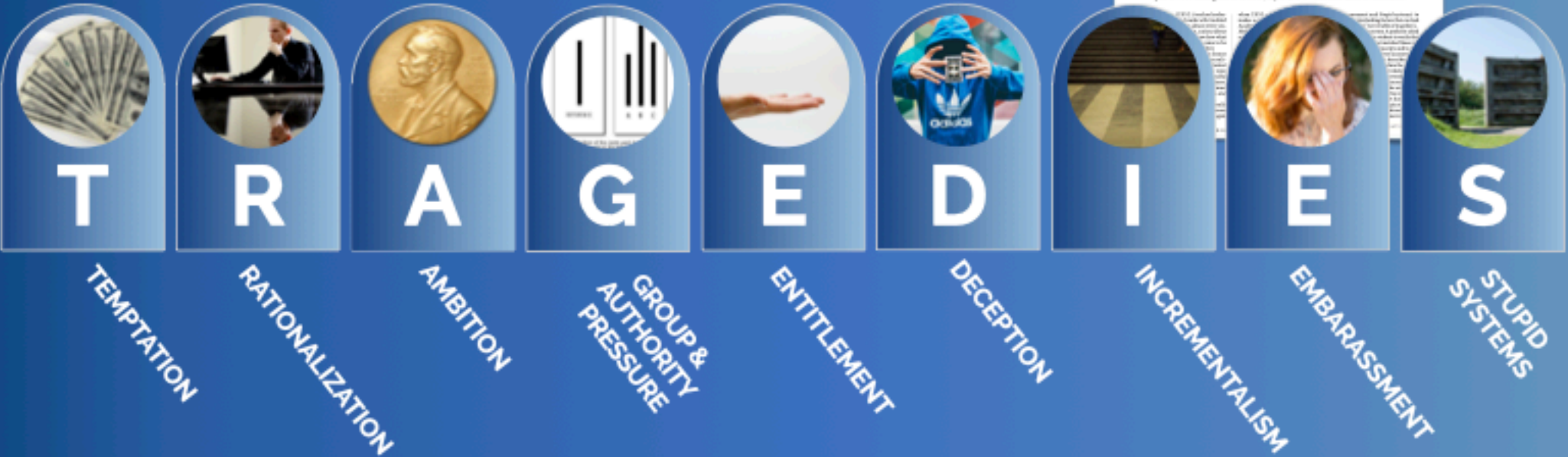
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*Note: Just because some practices seem to be "winning" doesn't make them right or ethical.

One-size-fits-all multiple choice compliance training is not RCR.

Career TRAGEDIES

COMMENT

Nine pitfalls of research misconduct

T — TEMPTATION
R — RATIONALIZATION
A — AMBITION
G — GROUP & AUTHORITY PRESSURE
E — ENTITLEMENT
D — DECEPTION
I — INCREMENTALISM
E — EMBARASSMENT
S — STUPID SYSTEMS

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Challenges

- Establishing and communicating purpose

- Creating and sustaining ethical context, decisions

- Providing, managing responsive processes

- Cultivating culture of open communication

- Building, empowering a functional team

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Generational Chasm

"Formative Distrust"

Labs That Work
FOR EVERYONE

BETTER SCIENCE *via* **LEADERSHIP DEVELOPMENT**

Practical tools for teamwork in lab settings rooted in personal values, goals

- build trusting relationships
- have difficult conversations to solve problems
- make effective and ethical decisions
- grow from mistakes or missteps

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Labs That Work for Everyone

Centered around a feature film, A Tale of Two Labs, with interlocking professional development content.

"The movie is the foundation of the program—it provides relatable content, broaches topics for discussion, and provides examples of using professional development tools so that the tools are more memorable."

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Principled Academic Leadership Range

- Train the Trainers
- TCU
- Department Leaders
- NTU Leadership Academy
- ALMI
- Research Theme Leaders
- Labs That Work for Everyone
- Labs That Work for Everyone

early career → Institutional leaders
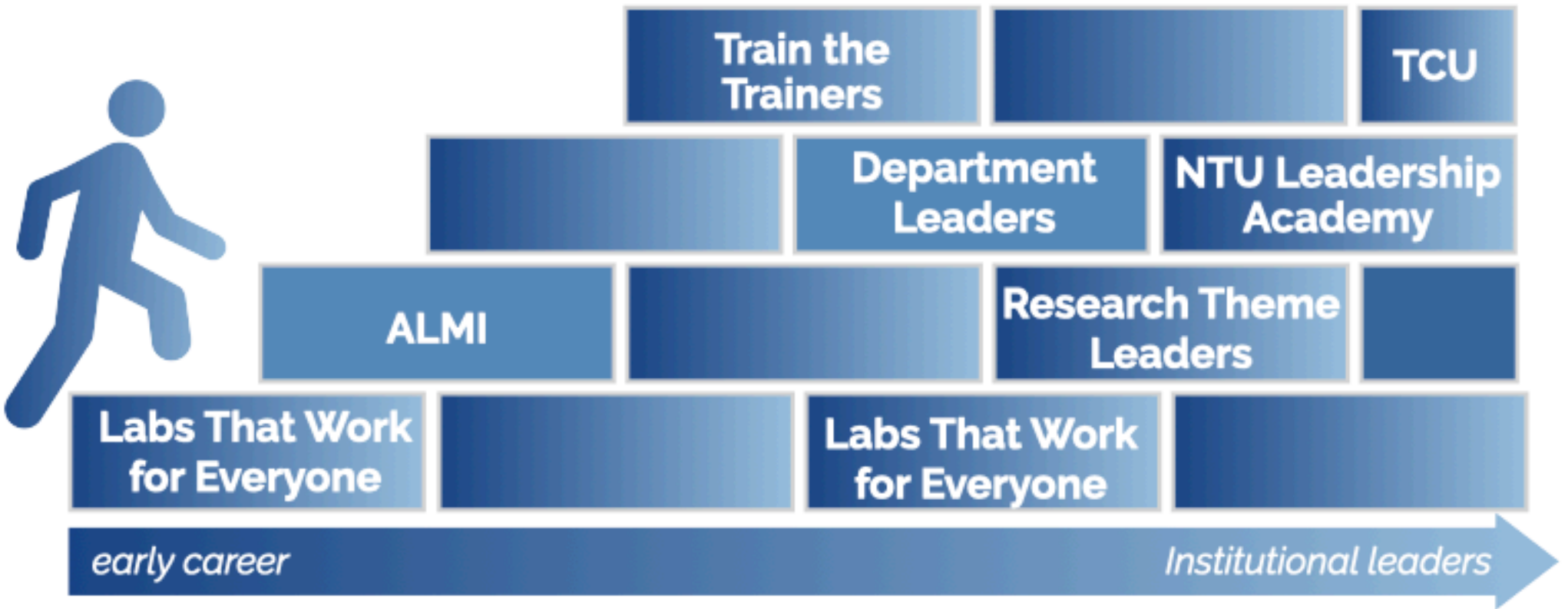
Principled Academic Leadership Foundations

Articulate Values & Goals

Use them to guide actions, set mission-guided priorities

Manage Yourself

Know yours strengths, weaknesses, reflect, build skills

Norms, Expectations

Create a culture of excellence, model what you expect of others

Leadership & Legitimacy

Understand your role; set, respect boundaries; maintain credibility

Data and Transparency

Promote objective measures of success, be accountable

2024-04-12 NASEM Ethics and Team Science Gunsalus.key - April 10, 2024

PAL: Concepts and Tools

Analytical Decision-Making Framework (DMF)

communication — listening, asking questions

influence and persuasion — negotiation skills

giving and receiving feedback

dealing with conflict — what = success? critical friends

mentoring & power — becoming/being an authority figure

Key Elements

Putting Into Practice

Communicating the framework (assumptions)/modeling the thinking

Building trusting relationships across the (entire) team

Creating practices for learning from unsuccessful attempts and improving

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Norms, Expectations

Create a culture of excellence, model what you expect of others

A strong team science charter can be a roadmap to a successful and responsible research project.

Note: *To have usefulness beyond attaching to a proposal, a charter must be a living document that is jointly developed, used—including in onboarding or introduction plans—discussed, and revisited.*

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Key Lessons about Culture

Culture exercises powerful influences over how we relate to each other, how we work together, and how we see ourselves.

Organizational cultures evolve over time.

As a leader, what you do—as much as what you say—has a significant influence on your team's culture.

Effective teams are rooted in thoughtful approaches to building organizational culture.

Team Expectations and Norms

- Values, Roles, and Responsibilities

- Interaction Standards and Conflict Resolution

- Data Management, Sharing

- Authorship, Publication

- Review and Revision

- Responsible Conduct of Research Education

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Co-Located Teams

- Possibilities for informal interactions, spontaneity

- Common context

- Sense of belonging mostly assumed

Dispersed Teams

- Intentional, scheduled interactions

- Cultural, institutional differences

- Sense of belonging takes intentional effort

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If we care about it, we should assess it ...and use that evidence to shape actions, policies.

ORGANIZATIONAL CLIMATE
Observable (therefore reportable) aspects of organizational life – policies, practices, procedures, norms

ORGANIZATIONAL CULTURE
Deeper foundation of beliefs and values of the organization (more subterranean, less observable)

SOURCE and CARES

Assess Climates

🚫 These are not **engagement** or **employee satisfaction** surveys

✅ They measure **perspectives** and **perceptions** of **key reportable dimensions** of the **organizational environment**

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Analytics

SOURCE Scales
Research Integrity Climates

- RCR Resources
- Regulatory Quality
- Integrity Socialization
- Integrity Norms
- Advisor-Advisee Relations
- Lack of integrity Inhibitors
- Department Expectations

CARES Scales
Psychological Safety & Respect

- Civility Climate
- Interpersonal Accountability
- Conflict Resolution
- Institutional Harassment Responsiveness

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BESSI: Behavioral, Emotional, and Social Skills Inventory

Assess SEB Skills

- Responsibility Management
- Anger Management
- Capacity for Optimism
- Capacity for Trust
- Capacity for Cultural Competence
- Capacity for Social Warmth
- Leadership Skill
- Perspective Taking Skills
- Teamwork Skills

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Analytics

- 🖥 Web-based tool for understanding results

- 📊 Analysis for institution; individual units within it; by roles

- 🎛 Ability to interact with data in multiple ways

- 🗄 Accessible data

- 📊 Data summary at different levels

Experimental Adjectives Instrument

Abusive
Anxiety provoking / Stressful
Authoritarian
Competitive (unproductively)
Creative/Curious
Dedicated
Disciplined / Focused
Discouraging
Careful
Collaborative / Cooperative
Collegial
Communicative
Competitive (productively)
Competitive (unproductively)
Creative/Curious
Dedicated
Disciplined / Focused
Discouraging

Discriminatory / Biased
Disorganized / Chaotic
Disrespectful
Dynamic
Dysfunctional
Efficient
Encouraging
Enthusiastic / Motivating
Flexible
Friendly
Fun
Hardworking
Hostile
Inclusive / Open-minded
Independent (empowering)
Individualistic (not team-
   oriented)

Inefficient
Isolated / Isolating
Just / Fair
Lacking resources (e.g.
   funding)
Leaderless
Learning / Discovery
   focused
Low morale
Micromanaging
Non-communicative
Open / Transparent
Overworked / Workaholic
Productive
Professional / Ethical
Relaxed
Respectful
Rigid / Inflexible

Just Safe / Stable
Supportive
Team / Group-oriented
Time-Pressured / Rushed
Toxic
Uncertain / Unpredictable
Uncollaborative /
   Uncooperative
Unfriendly
Unjust / Unfair
Unproductive
Unprofessional / Unethical
Unsupportive
Welcoming

Dim1 (80.8%)

Benchmarking power comes from competitive instincts of human beings. We can harness that to improve.

NCPRE Results Analysis Engine DATA
SOURCE: 29 🏛 in database

Faculty researchers and scientists	Graduate students in research	Postdoctoral researchers	Staff researchers	Undergraduate or non-research grad students
13K	8.7K	1.9K	5.2K	3.2K

CARES: 7 🏛

| 2K | 900 | 389 | 500 | 31 |

A national (and potentially international) comparison database will help all of us.

Measurement opens up opportunities to *act*.

People and structures must work in concert using mission and values-driven, data-informed actions to foster cultures of excellence.