

Being more scientific about scientific integrity

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A comparative benchmarking database: why, what, and how

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At ncpire, we:



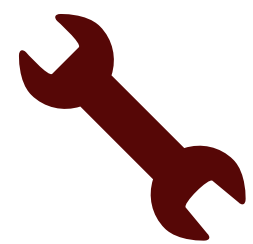
recognize that no one seeks disaster; small choices are important in personal and ethical pathways



educate about ethics as the smart choice, not just the right choice



develop leaders using evidence-based, practical, applied strategies



create tools, systems, and resources to help others educate about ethics and leadership



help institutions assess the integrity of their environments



when things go wrong, we provide strategies for salvage and for returning to business as usual



People are complicated



Context matters

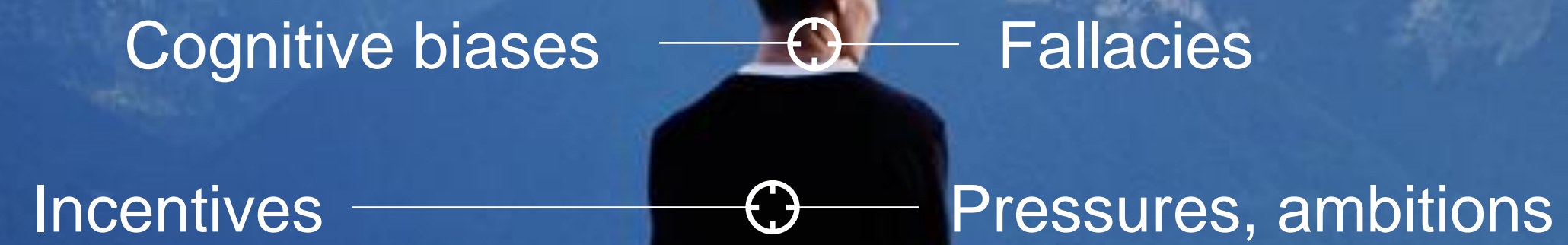
Reproducibility of Research: Issues and Proposed Remedies



2017 Sackler Symposium: Reproducibility



people are complicated



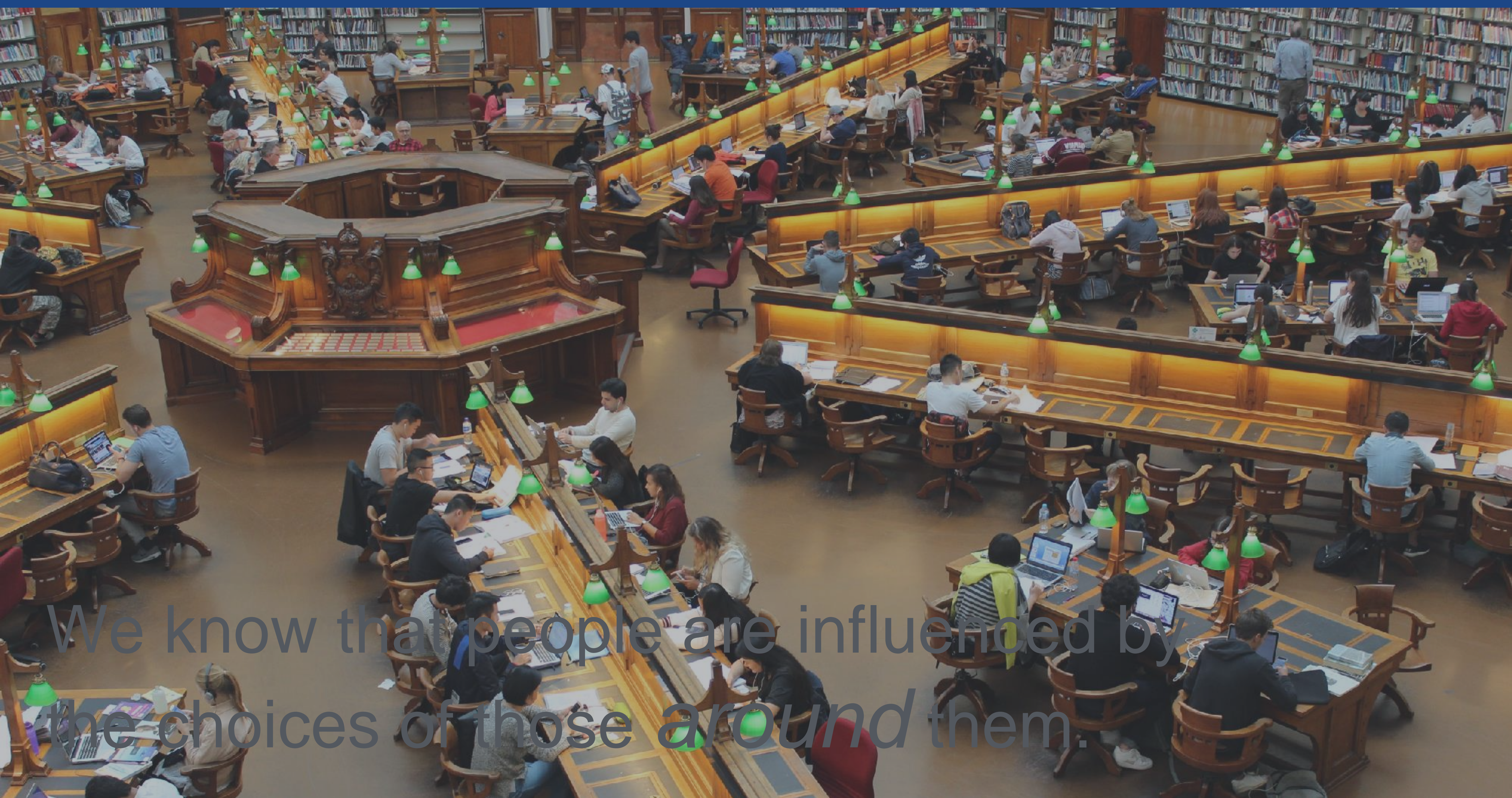
Human judgment and ambition

Sure, there are **bad** apples



We are each always individually responsible for our own actions.





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



*Research
tells us:*

“The amount of cheating in which human beings are willing to engage depends on the structure of our daily environment.”

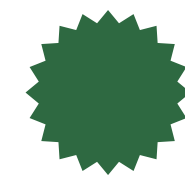


*The Truth About Dishonesty, Ariely
2013*

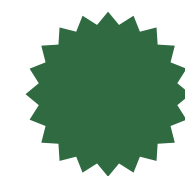


2002 IOM Report on Research Integrity

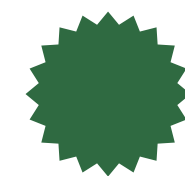
To promote responsible research conduct and fostering integrity, institutions should:



Establish and continuously measure their structures, processes, policies, and procedures



Evaluate the institutional environment supporting integrity in the conduct of research

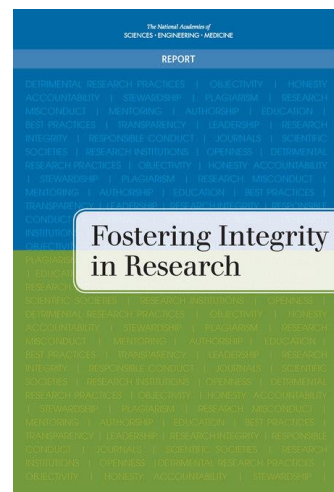


Use this knowledge for ongoing improvement

Recommendation Two:

Research institutions need to exercise vigilance in several distinct areas:

- Creating and sustaining a research culture that fosters integrity and encourages adherence to best practices through effective education and training and other mechanisms;
- Monitoring the integrity of research environments through internal assessments and multi-institution benchmarking exercises, and acting on the results;
- Ensuring that institutional policies and processes to investigate and address allegations of research misconduct are robust and generate just and timely outcomes; and
- Ensuring that senior institutional leaders such as the president, other senior executives, administrators, and faculty leaders are guiding and actively engaged in these efforts.



Fostering
Integrity in
Research
2017

Organizational Climate

“The shared meaning organizational members attach to the events, policies, practices, and procedures they experience and the behaviors they see being rewarded, supported, and expected.”


Ehrhart, Schneider, and Macey, 2014 (p. 115)



The Survey of Organizational and Research Environments (SOURCE)

Developed by Carol Thrush and Brian Martinson,





- ✓ First and currently only instrument statistically validated with large sample size
- ✓ Scores show correlation between choices and research environment
- ✓ Benchmarking through two-stage reporting: campus and anonymized comparison database



Benchmarking power comes from competitive instincts of human beings. Let's harness that to improve.








SOURCE

-  Survey includes 28 items on seven scales
-  Responses are confidential
-  Takes 10-15 minutes to complete online
-  Results correlate with self-reported research conduct behavior



SOURCE
Analytics

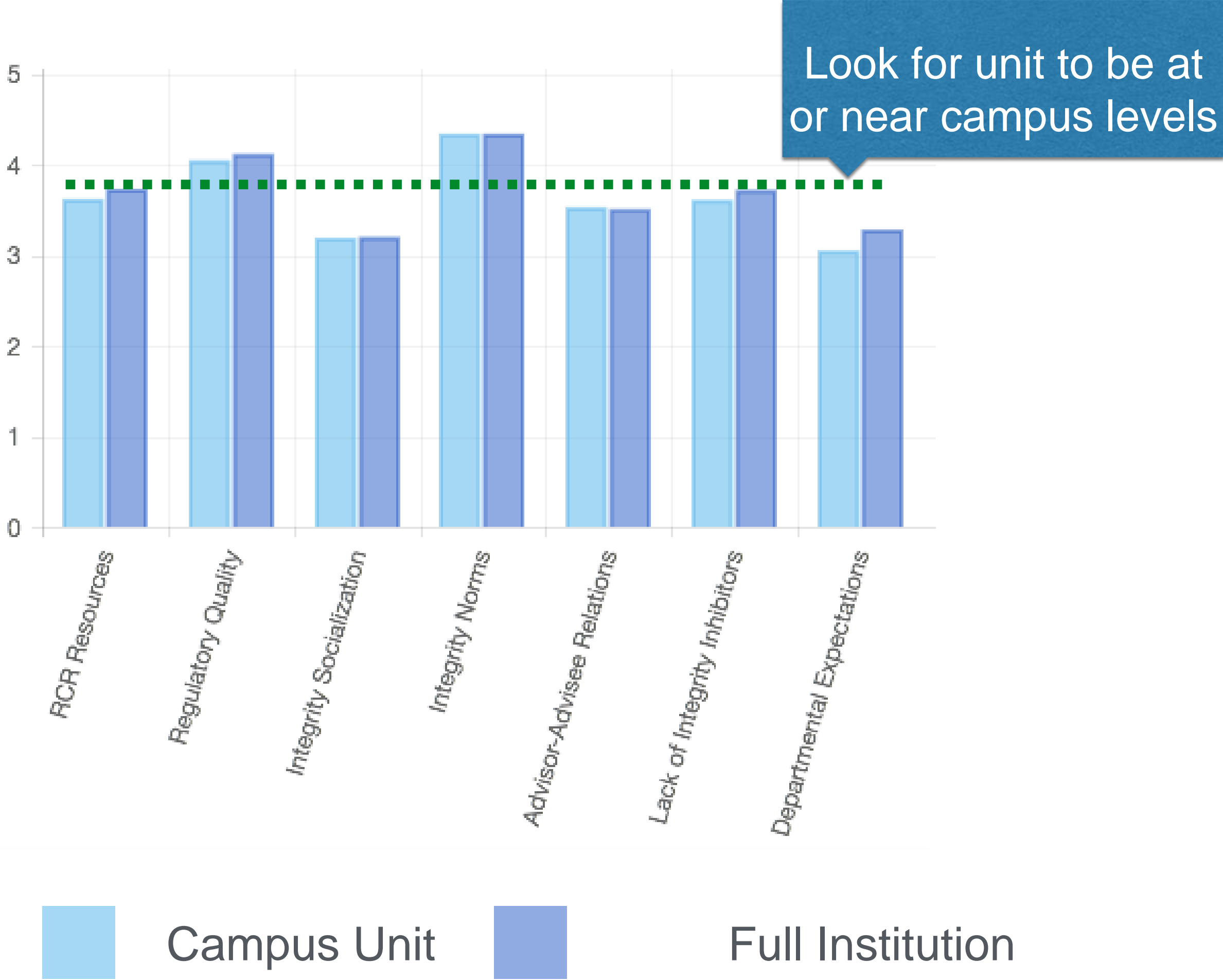
-  Web-based tool for understanding results
-  Analysis for institution; individual units within it; by roles
-  Ability to interact with data in multiple ways
-  Accessible data
-  Data summary at different levels



SOURCE
Analytics

Internal
Comparison

Department Compared to Institution

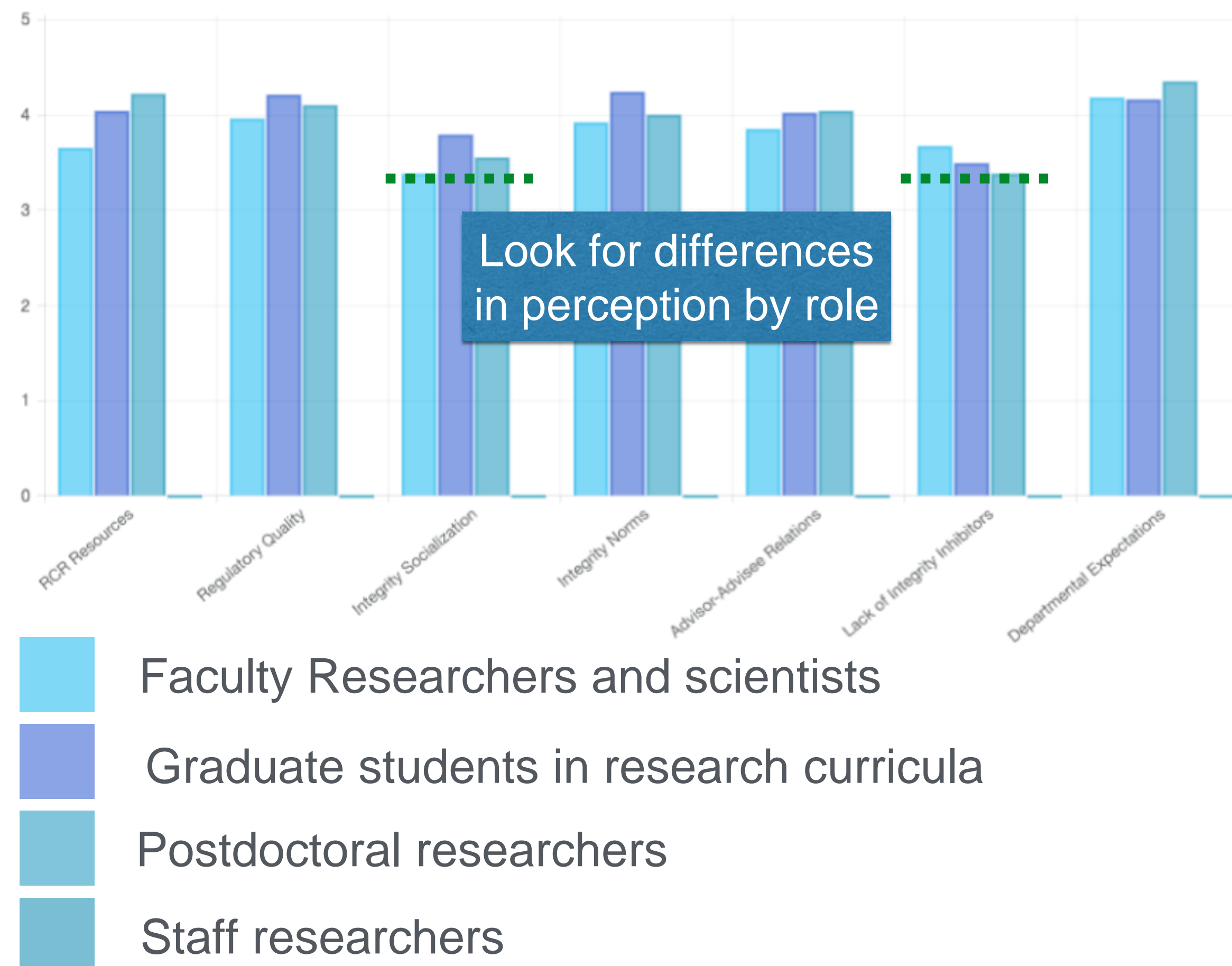




SOURCE *Analytics*

Role Comparison

Roles within Department

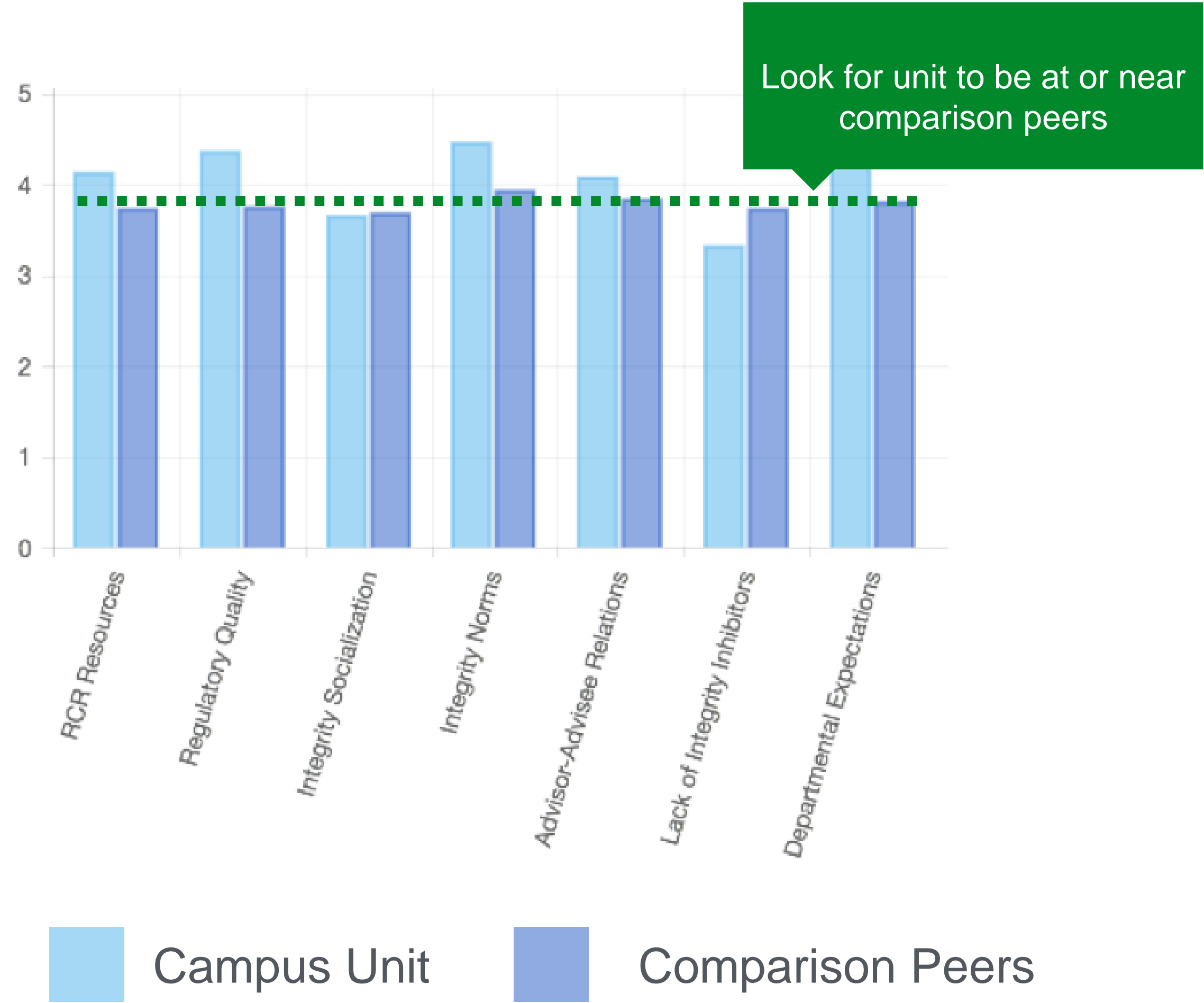




SOURCE
Analytics

Peer
Comparison

Department Compared to Peers





SOURCE Analytics

Score and Benchmark Analysis

Scale	Group	Mean	Population	StDev	Low	Mod	High
Responsible Conduct of Research (RCR) Resources	Unit Name	3.98	125	0.99	30%	32%	38%
	Comparison Group	3.71		1.07	36%	39%	25%
Regulatory Quality	Unit Name	3.95	39	0.83	31%	41%	28%
	Comparison Group	3.55		1.13	44%	33%	23%
Integrity Socialization	Unit Name	3.43	70	1.25	47%	31%	21%
	Comparison Group	3.51		1.19	42%	36%	22%
Integrity Norms	Unit Name	3.9	67	1.06	27%	42%	31%
	Comparison Group	4.11		0.91	22%	39%	40%
Advisor-Advisee Relations	Unit Name	3.96	54	0.95	31%	33%	35%
	Comparison Group	3.75		0.93	31%	51%	18%
Lack of Integrity Inhibitors	Unit Name	3.21	103	1.3	58%	20%	21%
	Comparison Group	3.67		1.26	39%	27%	34%
Departmental Expectations	Unit Name	3.5	38	1.08	45%	39%	16%
	Comparison Group	3.42		1.06	44%	44%	12%

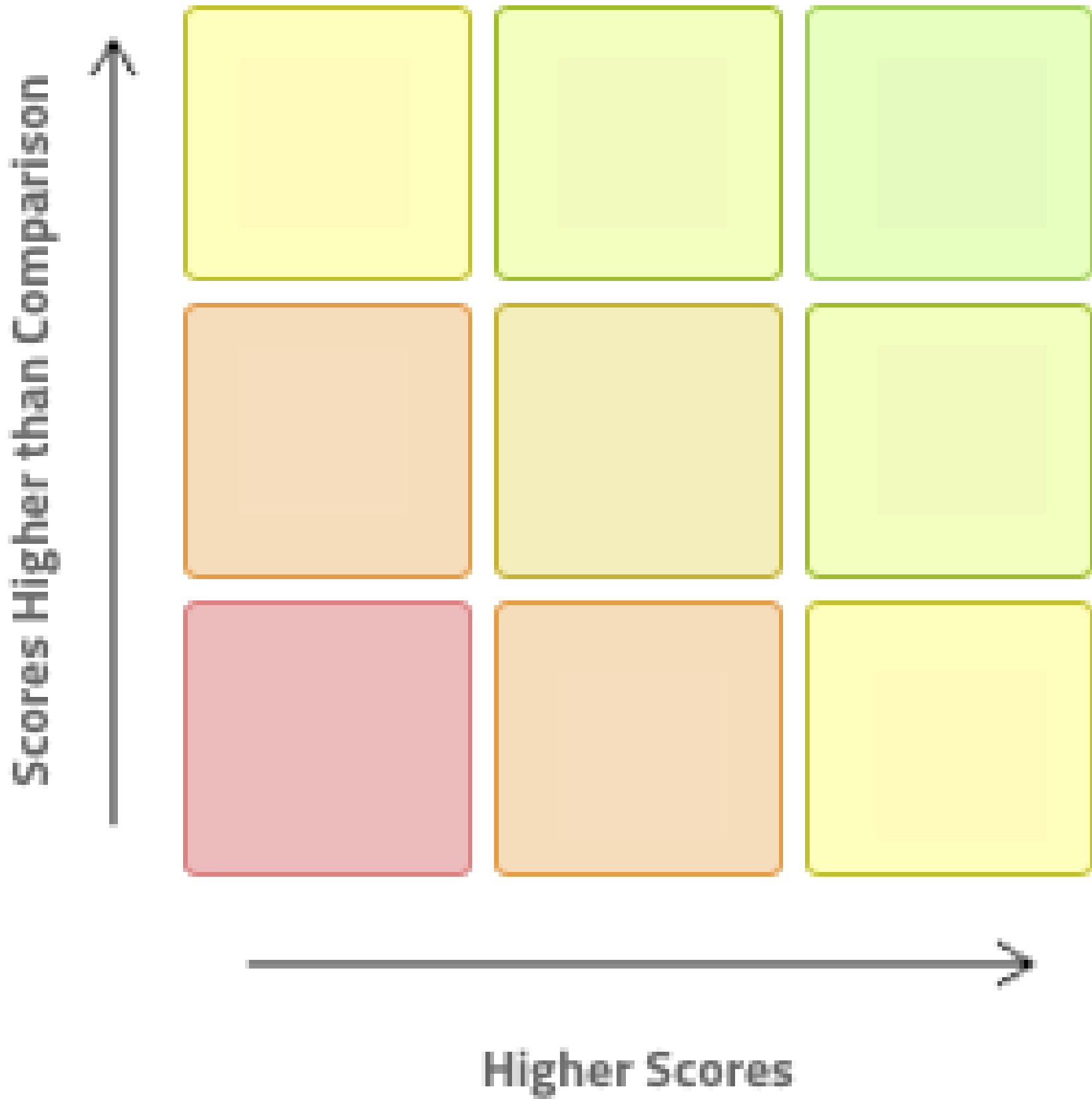
Scores: Show % of respondents with low, moderate, and high quality perceptions of the particular research environment component.

Highlight: Two-part benchmarking comparison based on low and high quality perceptions (green low means fewer unfavorable perceptions, red low means more unfavorable perceptions, green high means more favorable perceptions, and red high means fewer favorable perceptions).



SOURCE
Analytics

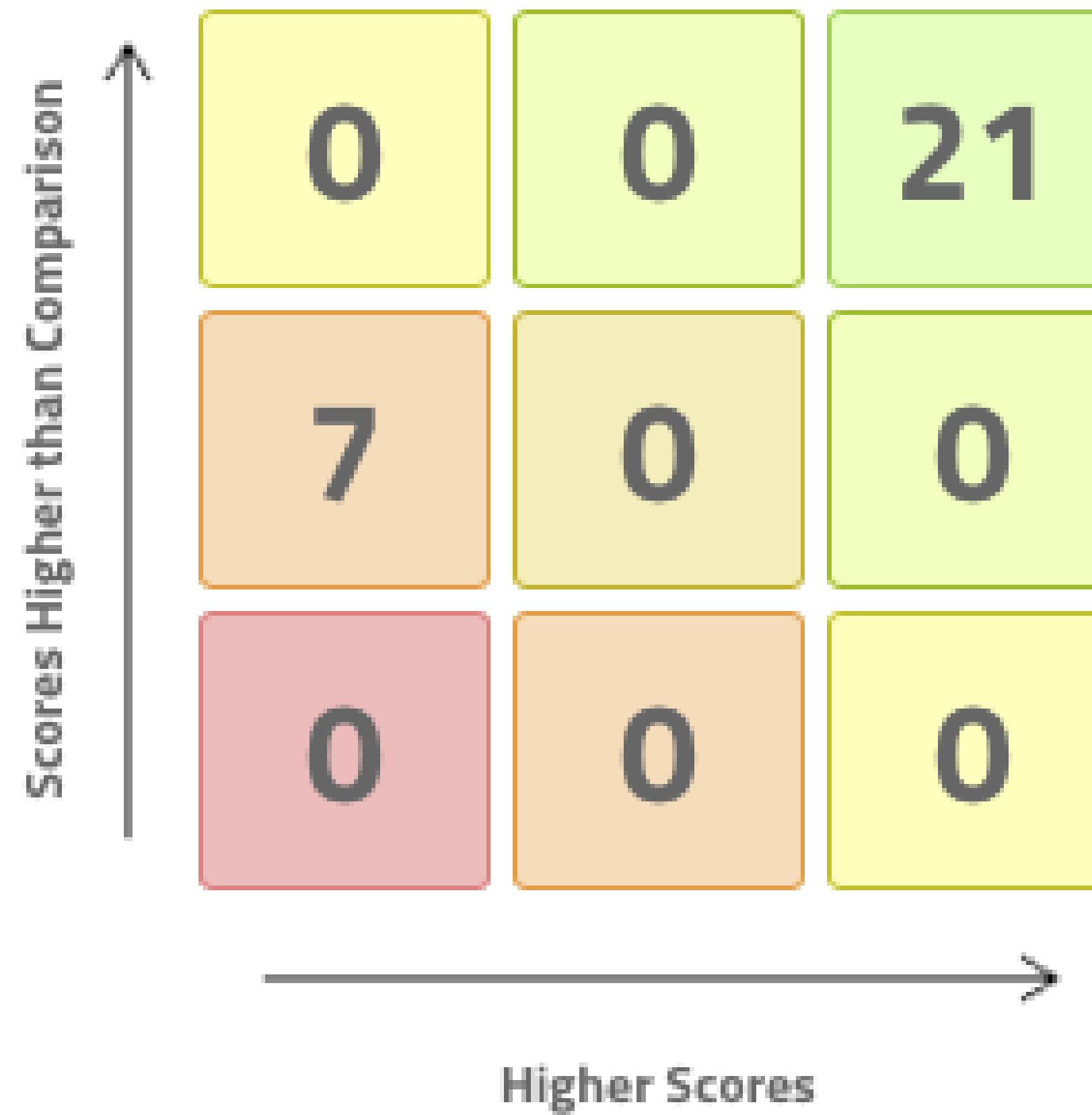
Results at a
Glance





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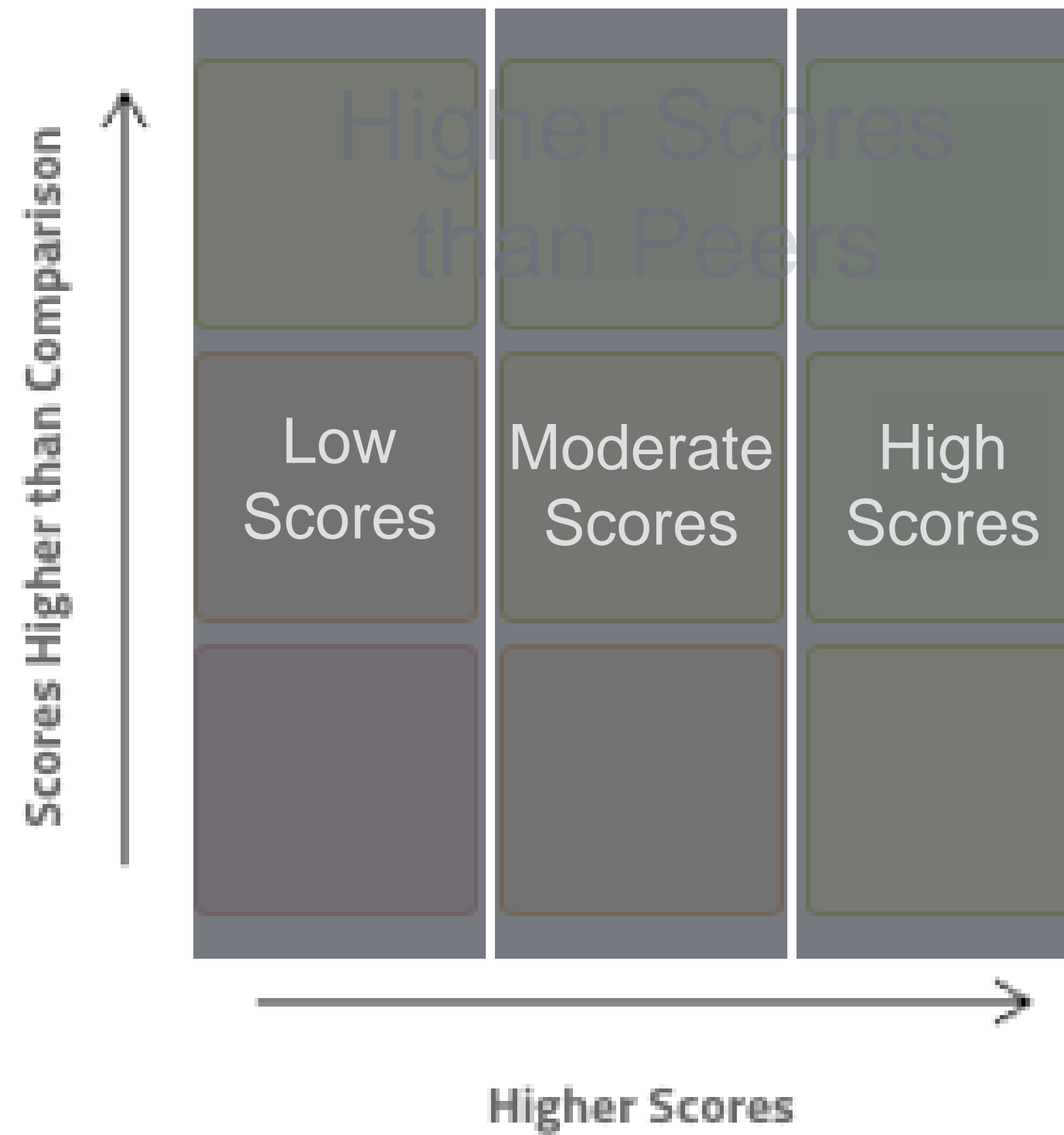
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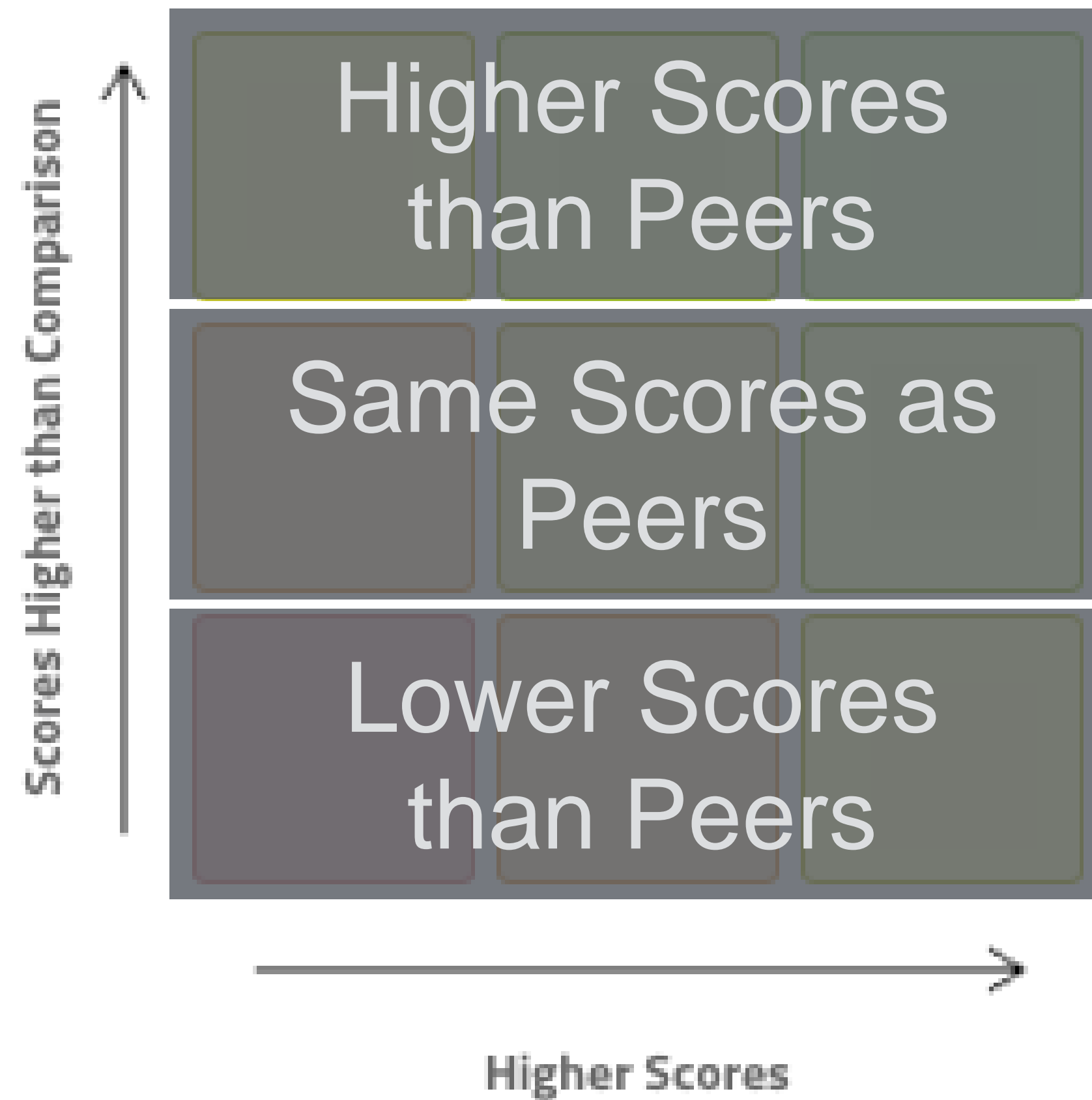
Results at a
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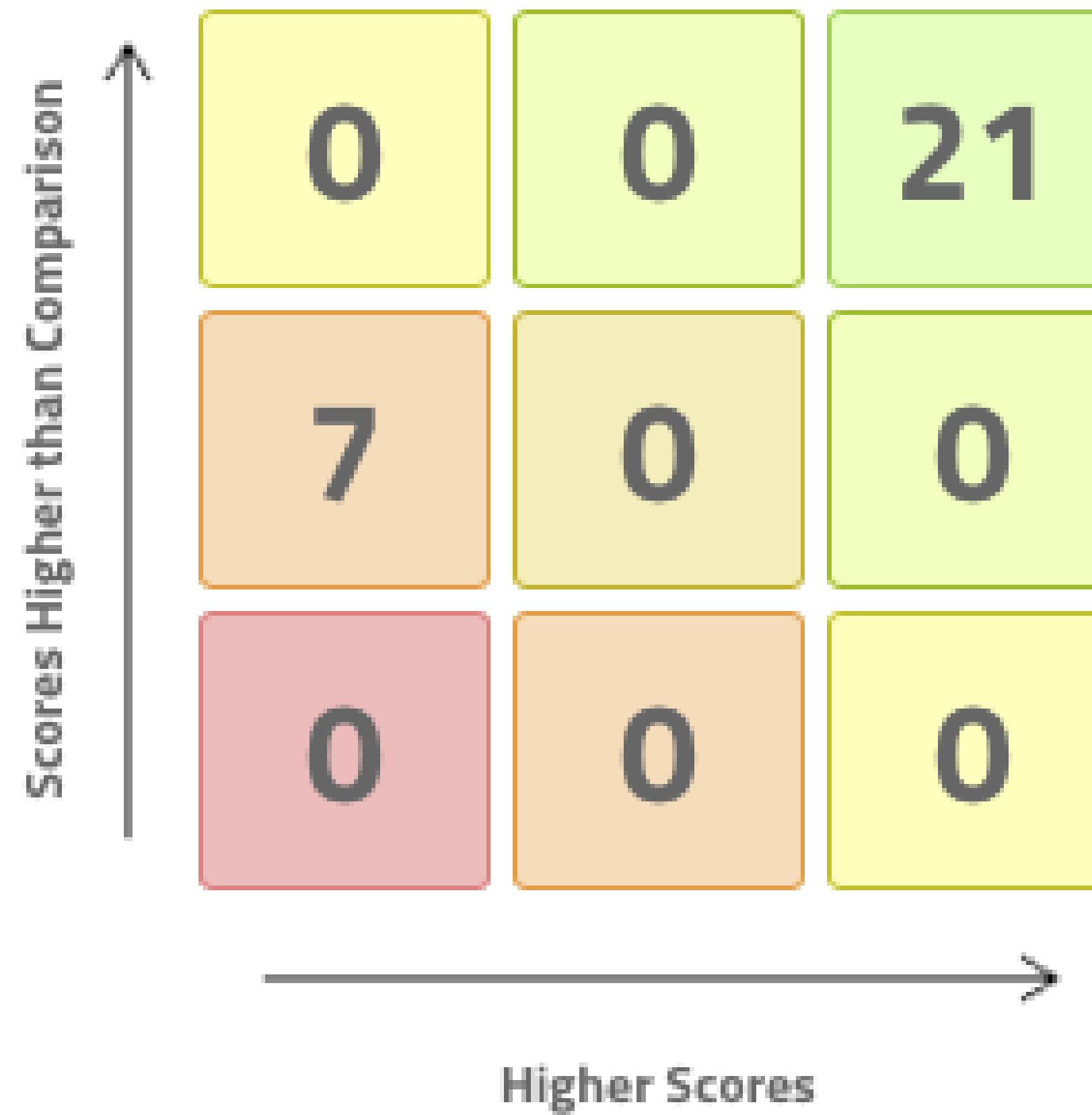
Results at a
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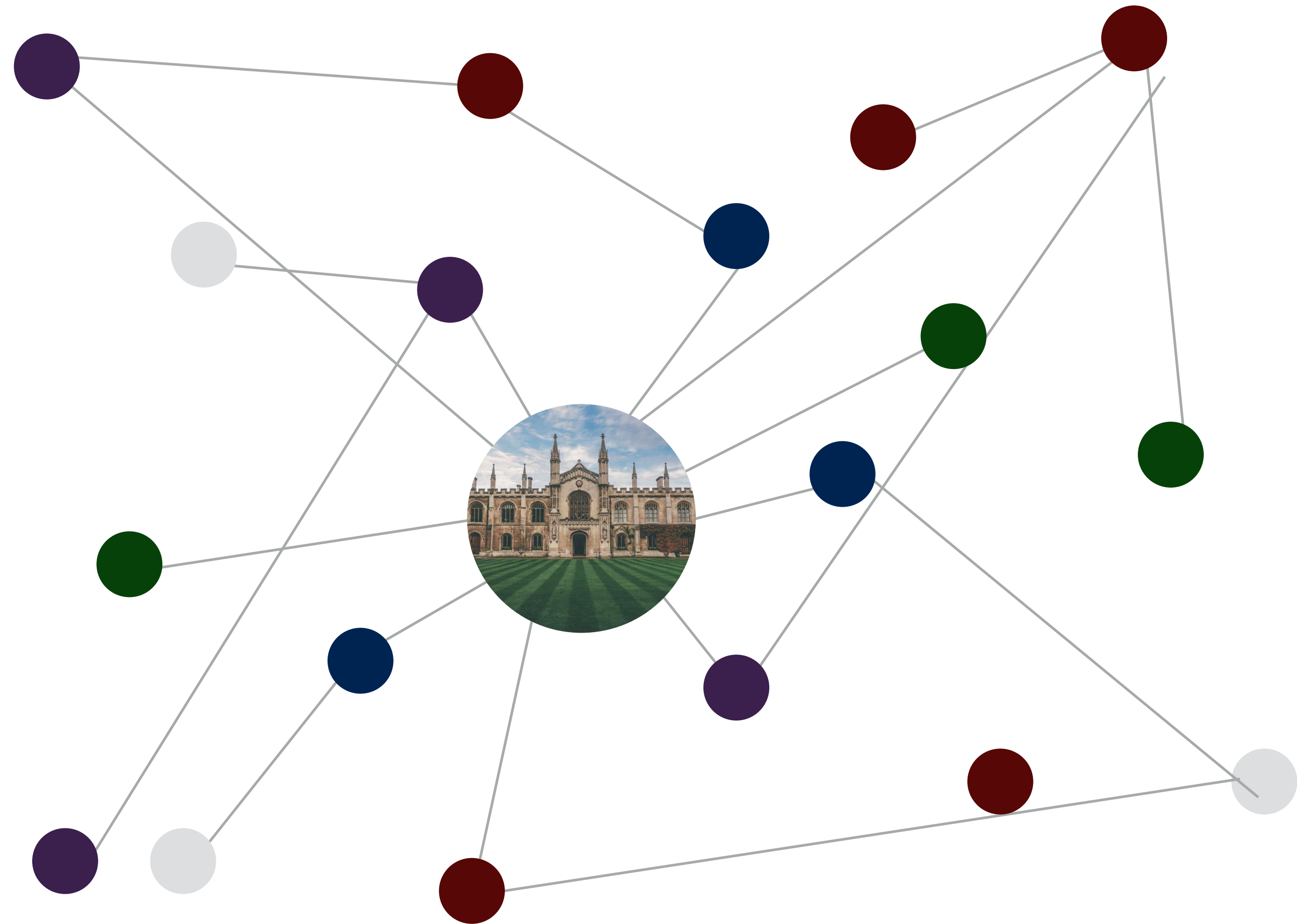
Results at a
Glance





SOURCE *Analytics*

Institutional
Comparison



Benchmarking power comes from competitive instincts of human beings. Let's harness that to improve.



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



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Current Use
and Interest

8

INSTITUTIONAL
RESULTS IN DATABASE

5

IN PROCESS

MORE HAVE EXPRESSED
INTEREST



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Flexible
Implementation



Research



International and
cultural
adaptation



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Results
Analysis
Engine

web: <https://ethicscenter.csl.illinois.edu>
email: ethicsctr@illinois.edu



ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Exploring cross-cultural similarities, differences and collaborative interests in measuring organizational climate for research integrity

C. Thrush

University of Arkansas for Medical Sciences, Little Rock, AR, U.S.A.

Netherlands
is 0.27 times as
big as Arkansas



Population ~17 million

England
is 0.95 times as
big as Arkansas



Population ~53 million

Arkansas
THE NATURAL STATE



Population ~3 million



Fast facts

- Only comprehensive medical school / AHC in Arkansas
- ~3,000 students / residents
- ~1,500 faculty members
- Research funding \$110+ million
- Top 18% of all U.S. universities in research funding from federal government



Words and Context Matter

Scientific Term	General Meaning / Perception	Better Choice
Abstract	Vague, intangible	Summary, take home message
Significant	Meaningful, important	Less than 5% chance of being wrong
Study	Cram for a test	Set of experiments
Values	Ethics, monetary value	Numbers, quantity

Adapted from: “Communicating the Science of Climate Change,” Richard C. J. Somerville & Susan Joy Hassol, October 2011, Physics Today, page 48.

Does the term “Research Integrity” translate well into your native language?

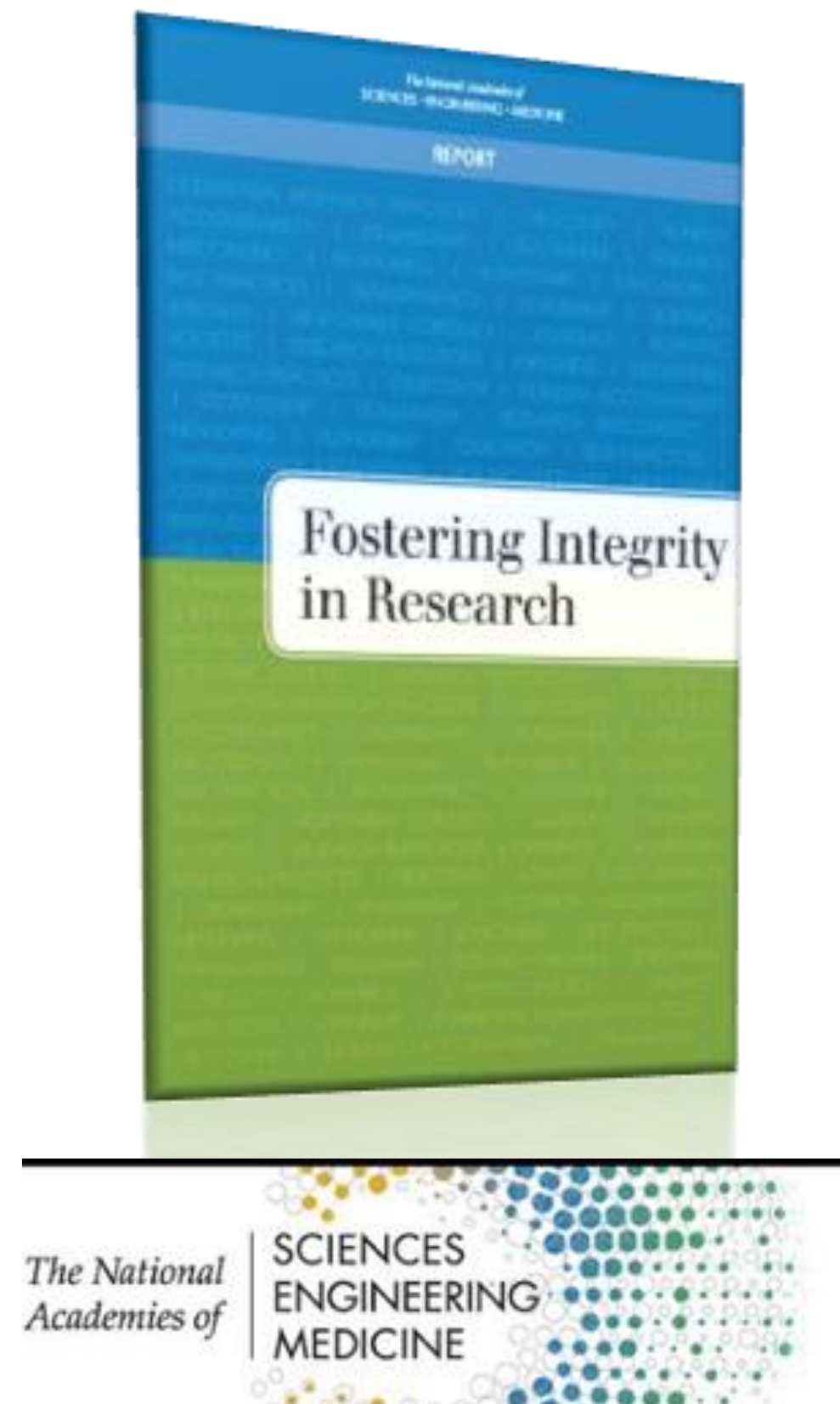
Is RCR a universal concept?

Fundamental Values of Research



- Objectivity
- Honesty
- Openness
- Accountability
- Fairness
- Reliability
- Skepticism

Fundamental Values of Research



- Objectivity
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Is research misconduct a universal concept?

Account Res. 2015 ; 22(5): 249–266. doi:10.1080/08989621.2014.958218.

An International Study of Research Misconduct Policies

David B. Resnik, J.D., Ph.D.¹, Lisa M. Rasmussen, Ph.D.², and Grace E. Kissling, Ph.D.¹

¹National Institute of Environmental Health Sciences, National Institutes of Health, Research Triangle Park, North Carolina, USA

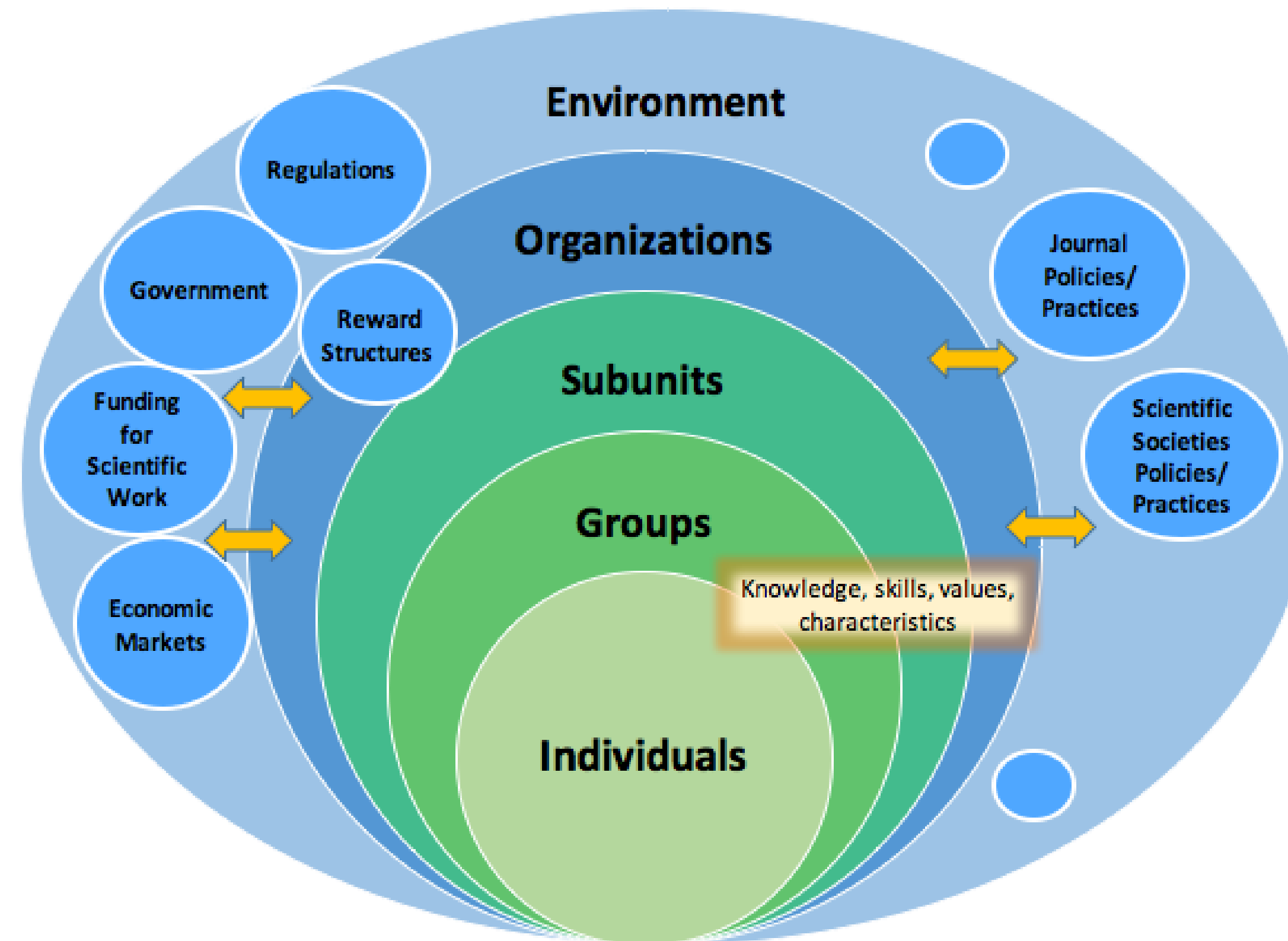
²University of North Carolina at Charlotte, Charlotte, North Carolina, USA

Abstract

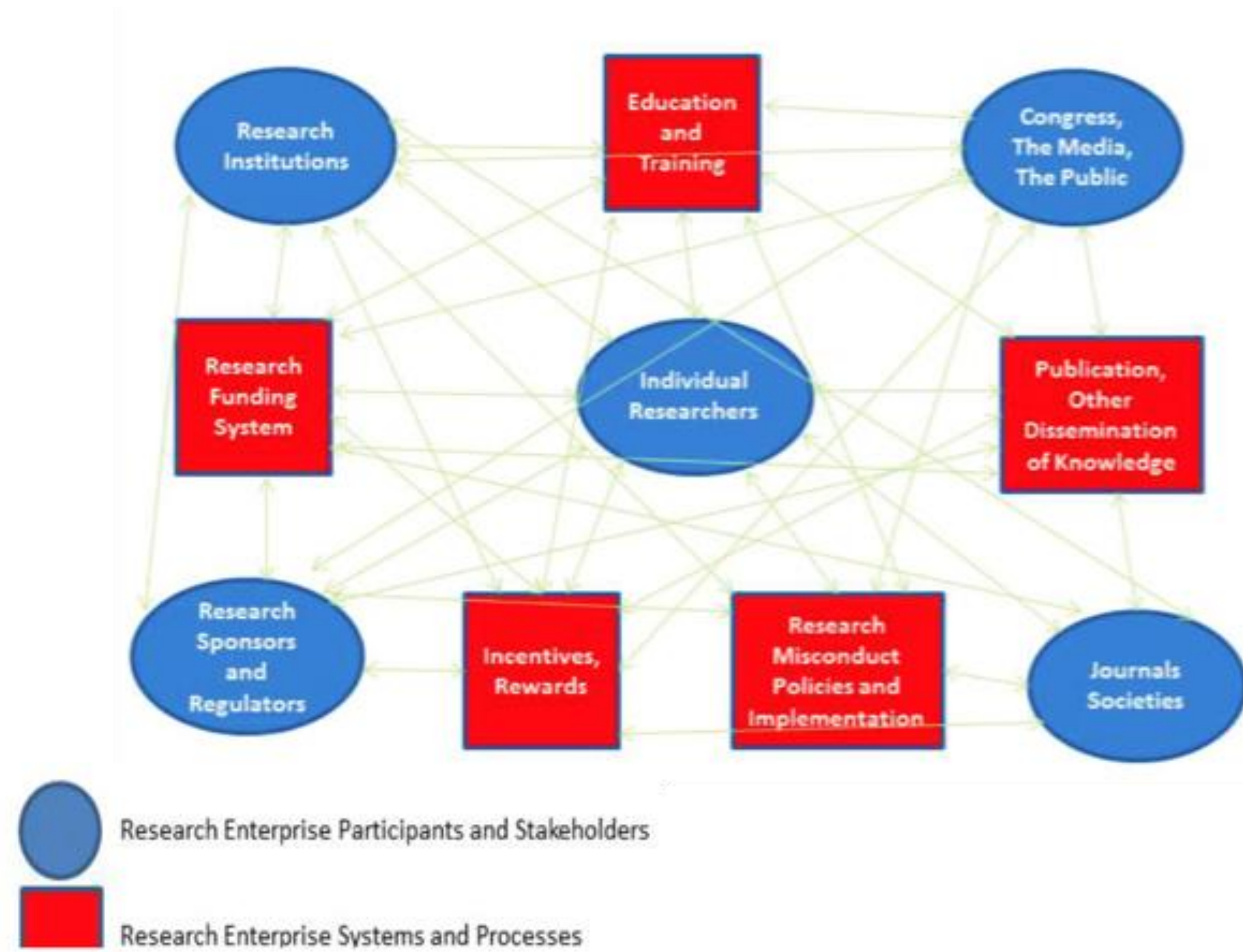
Research misconduct is an international concern. Misconduct policies can play a crucial role in preventing and policing research misconduct, and many institutions have developed their own policies. While institutional policies play a key role in preventing and policing misconduct, national policies are also important to ensure consistent promulgation and enforcement of ethical standards. The purpose of this study was to obtain more information about research misconduct policies across the globe. We found that twenty-two of the top forty research and development

Of 40 countries examined, about half (55%) had national policy
Extensive variation; all had fabrication, falsification and plagiarism

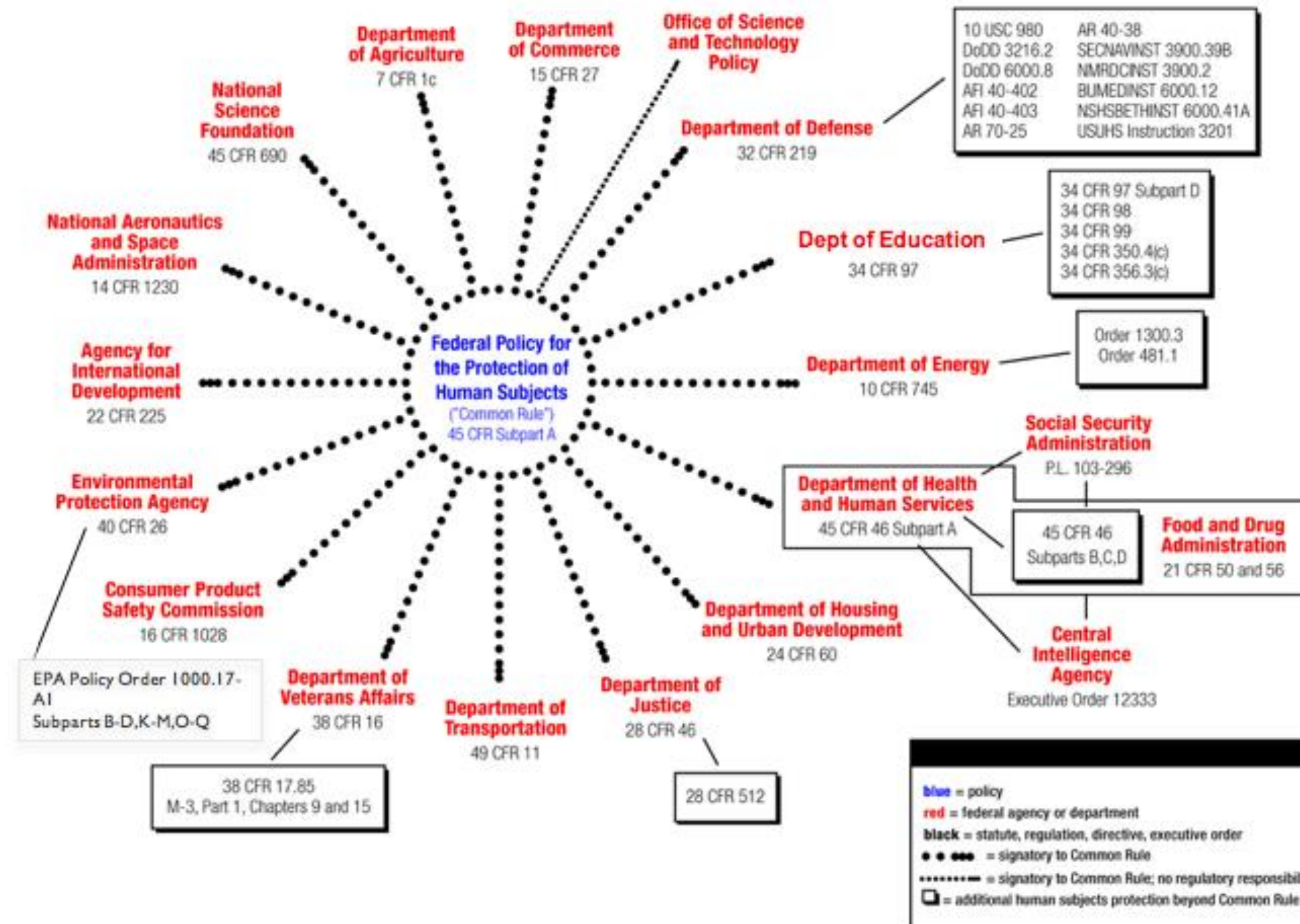
Research integrity in practice is multidimensional

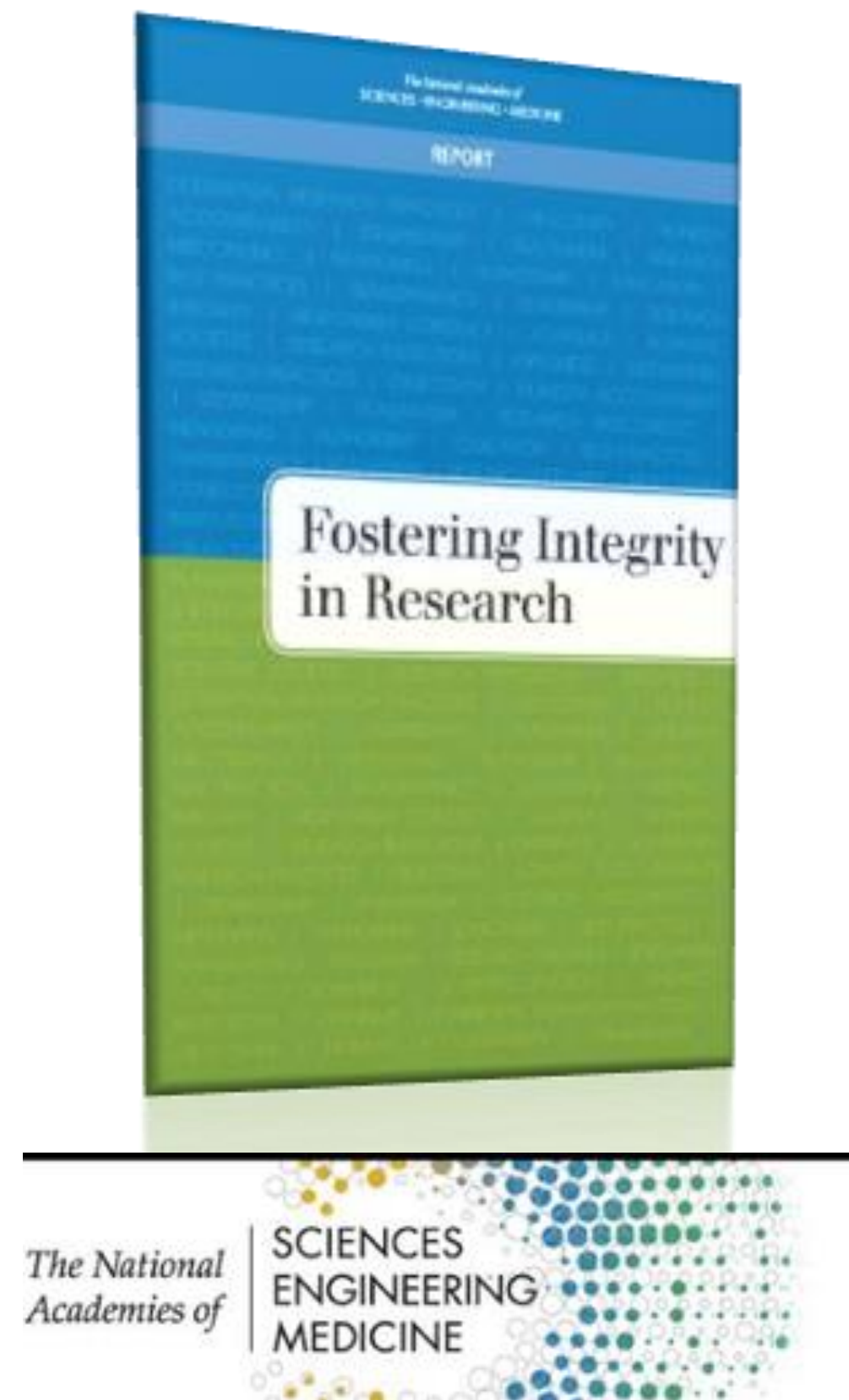


It is also dynamic...and complex



Current Federal Regulatory Structure





Recommendation Eleven:
Researchers, research institutions,
and research sponsors that
participate in and support
international collaborations should
leverage these partnerships to
foster research integrity through
mutual learning and sharing of best
practices, including collaborative
international research on research
integrity.

Sometimes simple transition is not the issue

Preparing Students to Navigate Cross-National Differences in the Research Environment

The Role of Research Integrity Education

Elizabeth Heitman and Juleigh Petty¹

“...standards of research integrity ultimately develop within the profession, established and sustained by researchers themselves, not simply imposed as policy by eternal regulatory authorities.” pg. 212

Considerations in cross-cultural implementation of SOURCE?

- Using SOURCE in current form may work just fine
- SOURCE content/items may work well, but may need to be translated into native language
- Additional issues unique to the culture/climate of an organization, country, setting, may require addition of new items/content or deletion of others

What drives “how things work around here”

Interest in SOURCE



*80 U.S. locations (VAMCs, AHCs) not shown, due to anonymity per research protocol.

SOURCE - Example 1

Regulatory Quality (institutional)

How fair to researchers are the regulatory committees or boards that review the type of research you do (e.g. IRB, IACUC, etc.)?

SOURCE - Example 2

Departmental expectations

How fair are your department's expectations
with respect to publishing?

SOURCE - Example 3

Integrity inhibitors (departmental)


How true is it that people in your department are more competitive with one another than they are cooperative?

SOURCE - Example 4

Advisor /advisee relations (department)

How respectfully do advisors/supervisors treat
advisees/supervisees?

Global community for organizational climate assessment?

- 
- Interest in creating an international community for collaborating on organizational climate assessment?
 - What would that look like?
 - What kind of resources would be needed?