

II BRISPE

Second Brazilian Meeting on Research Integrity,
Science and Publication Ethics

IBqM/UFRJ & COOPE • FIOCRUZ • USP • PUCRS

Rio de Janeiro, São Paulo, Porto Alegre (May 28 - June 1, 2012)



Research Integrity In Science & Technology: International Panorama

II Brazilian Meeting On Research Integrity, Science
And Publication Ethics – II BRISPE
28 May – 01 June 2012

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Big picture



► Q: Why the interest in “research integrity”?

► A: There is room for improvement!


- ✦ Some researchers engage in misconduct
- ✦ More researchers cut corners and engage in questionable practices



► Who cares?

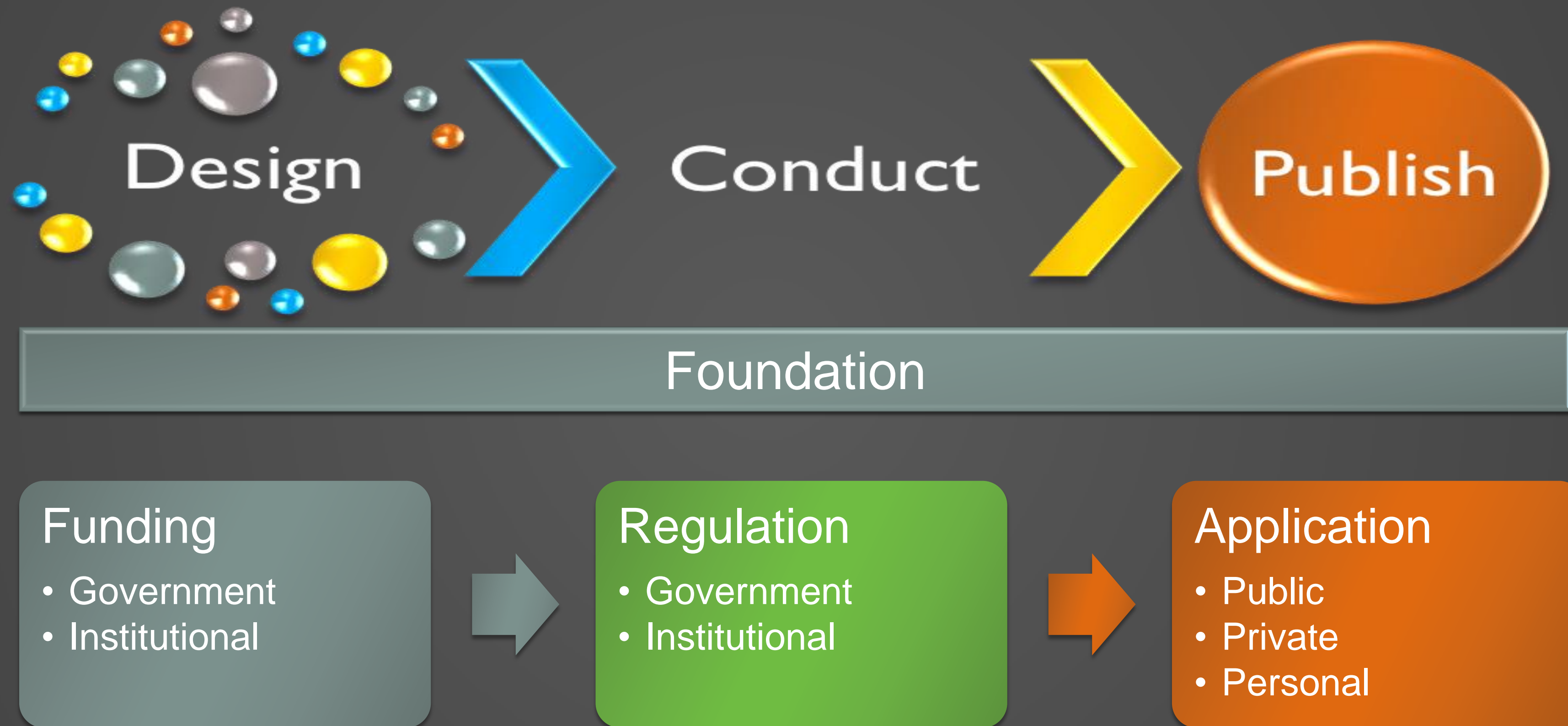
- ✦ Researchers – misbehavior compromises reliability of research
 - loss of respect and support for research
- ✦ Public – wastes money invested in research

► Talk today: What is going on internationally to address this situation?

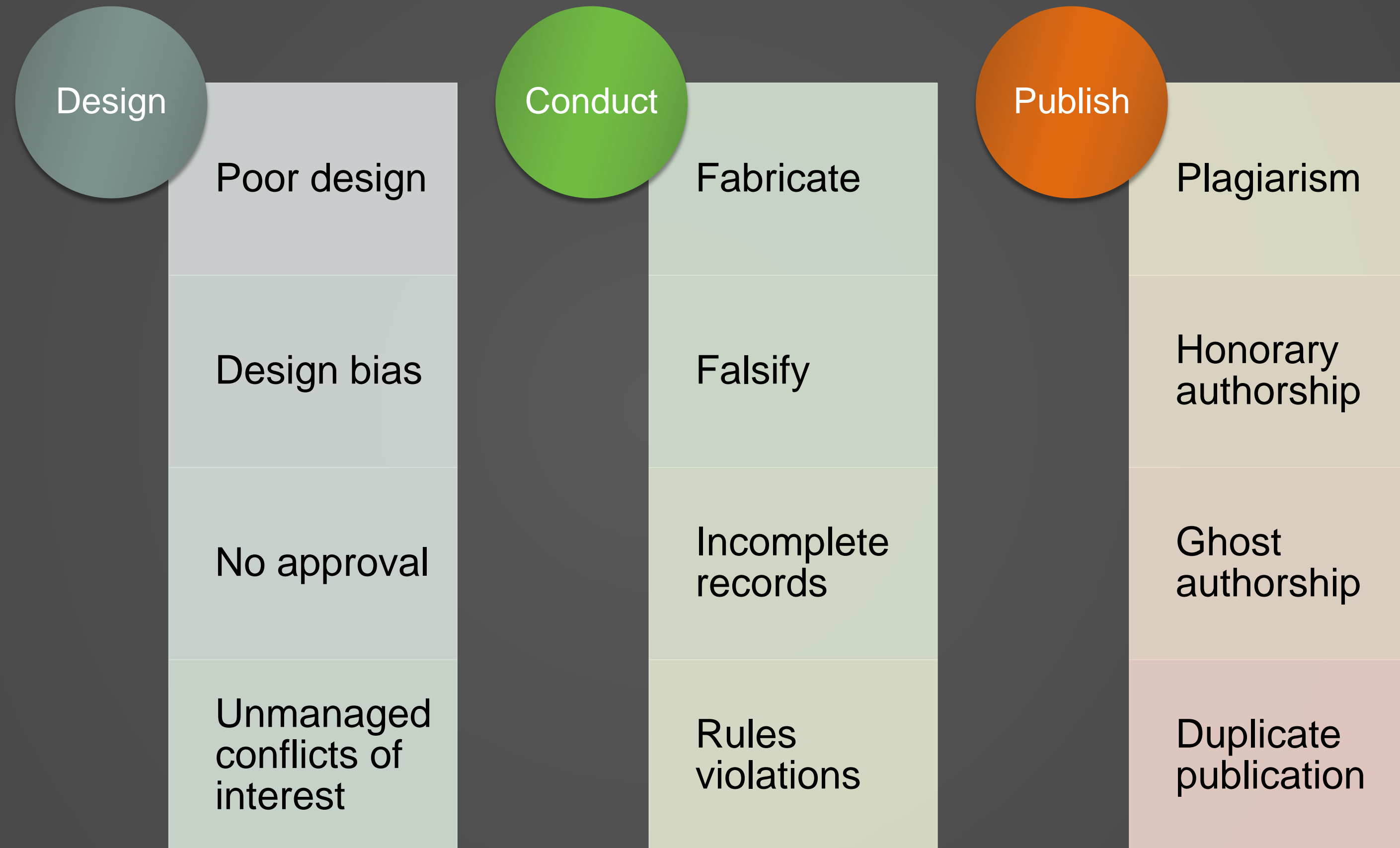


*THE
PROBLEM?*

How research functions



What can go wrong?



Frequency

Questionable Research Practices

20-50%

Research Misconduct

Research Integrity

1%

??
%

Irresponsible

Responsible

Impacts all levels of research

High School Science Fair



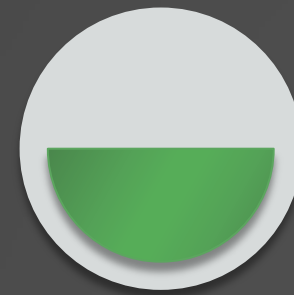
A survey of one Kentucky high school's science fair participants found that 65% of respondents had falsified data. Source: Flickr, DrBacchus

Impacts all levels of research (survey data)



High School

65% falsified data
20% altered hypothesis after finishing their study
33% abused the scientific method



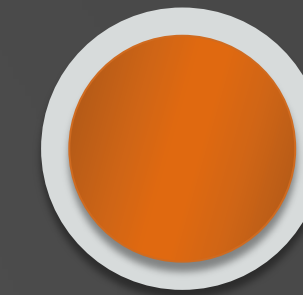
College

60% admit to cheating in college
16.5% did not regret cheating
85% think cheating is essential
95% don't get caught



Graduate

15% select or omit data to get paper published
27% select or omit data to improve grant
32% add undeserving author



Researcher

1% engaged in misconduct
10% violate research regulations
40% don't keep proper records

Public face of misbehavior

Researcher	Diederik Stapel
Country	Netherlands
Field	Social psychology
Misdeed	Falsified evidence in studies over many years
Impact	Lost position, students and colleagues have had to retract papers



Public face of misbehavior

Researcher	Dipak Das
Country	US, University of Connecticut
Field	Medicine, cardiovascular
Misdeed	Falsified evidence of the benefit of drinking red wine
Impact	10,000s of women given wrong medical advice



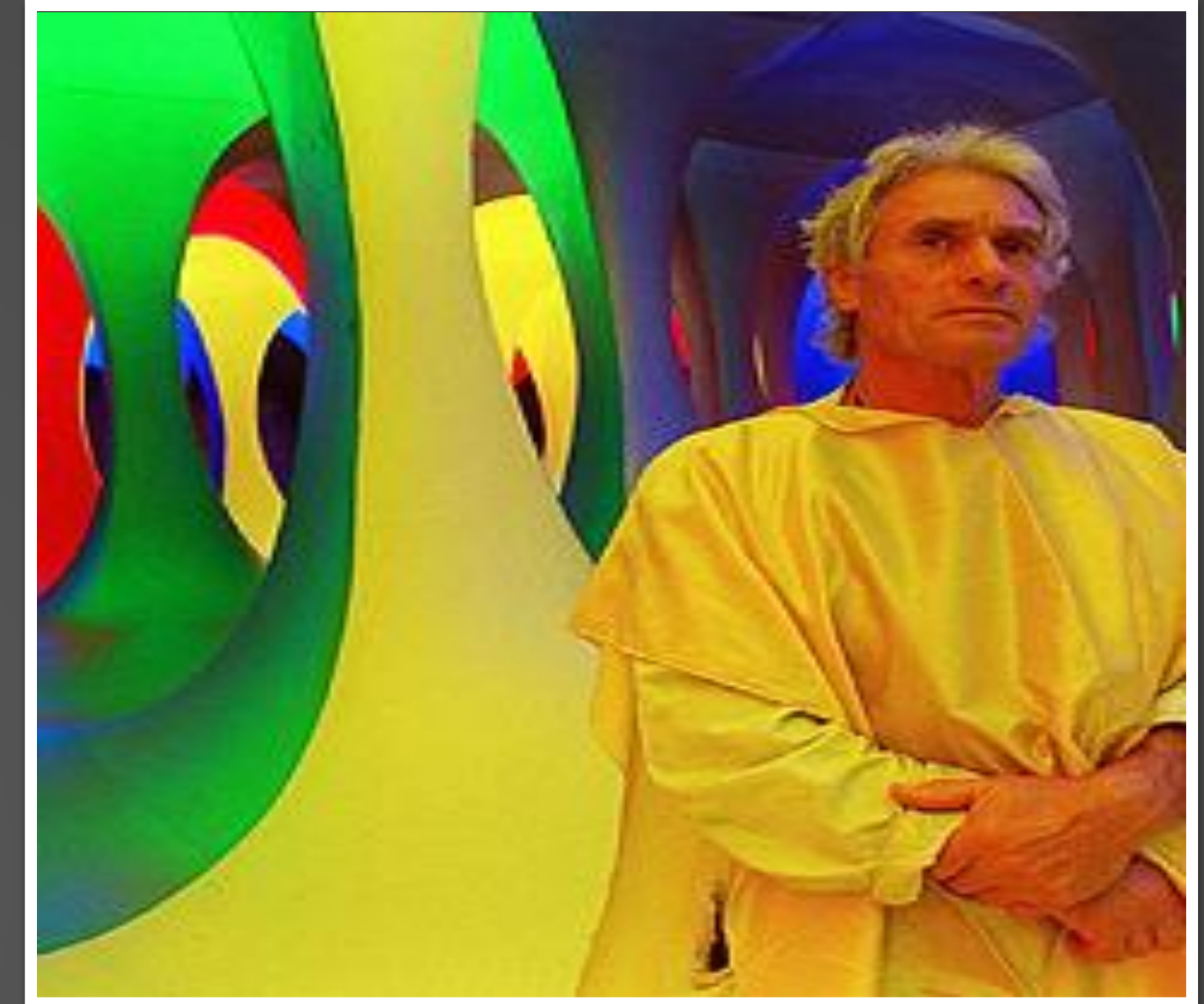
Public face of misbehavior

Researcher	Yoshitaka Fujii
Country	Japan, Toho University
Field	Anesthesiology
Misdeed	193 publications suspected of fabrication; violation of ethics rules
Impact	Journals and universities major expense verifying validity or misconduct



Public face of misbehavior

Researcher	Maurice Agis
Country	UK, independent artist
Field	Art
Misdeed	Violated safety rules in experimental art project
Impact	2 people killed, 38 injured

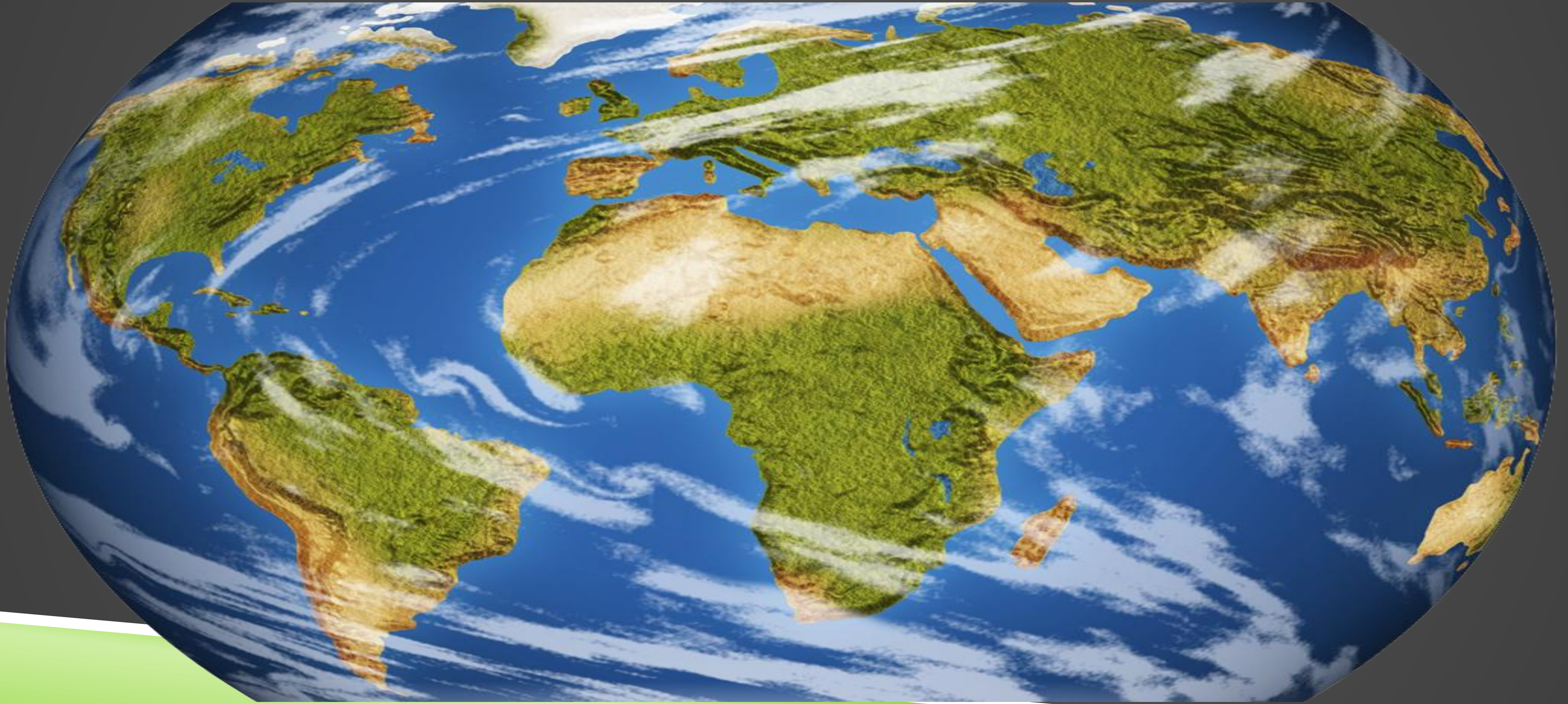


Public face of misbehavior

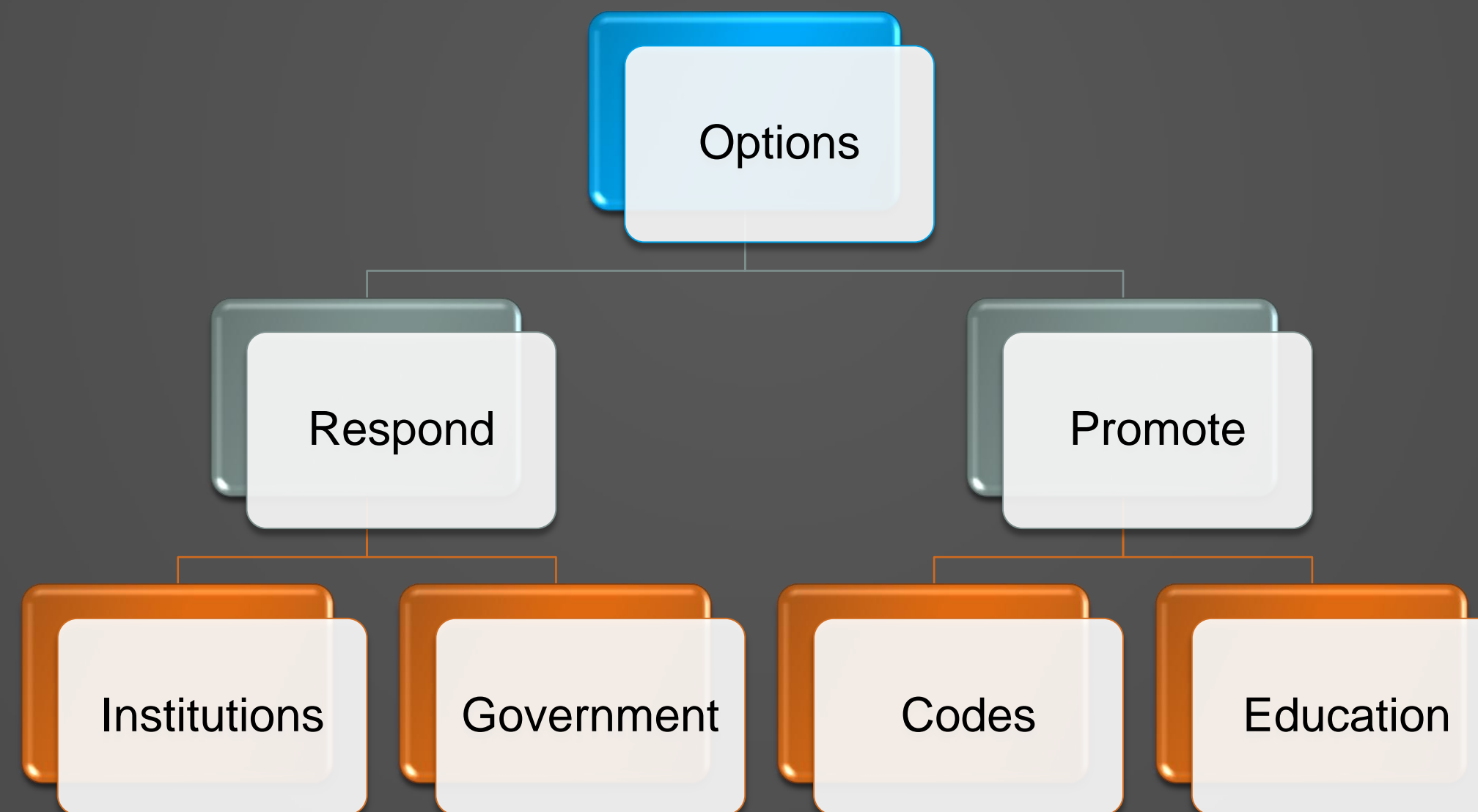
Researcher	Craig B Thompson
Country	US, Sloan-Kettering Cancer Center
Field	Cancer treatment
Misdeed	Took data from former employer (University of Pennsylvania) without permission
Impact	\$1,000,000,000 law suit



Research integrity is a global challenge



SOLUTION?



Institutional response ~ widely relied upon

Self-regulation

Researchers replicate and review the work of colleagues

Misbehavior is detected and reported

No need for further regulations

Weaknesses

Research is seldom replicated exactly

Researchers do not carefully review the work of colleagues

40% who suspect misconduct do not report

Institutions sometimes ignore allegations

Lesson

Relying solely on institutional response is not effective!

Government response ~ growing in importance

What can governments do to respond?

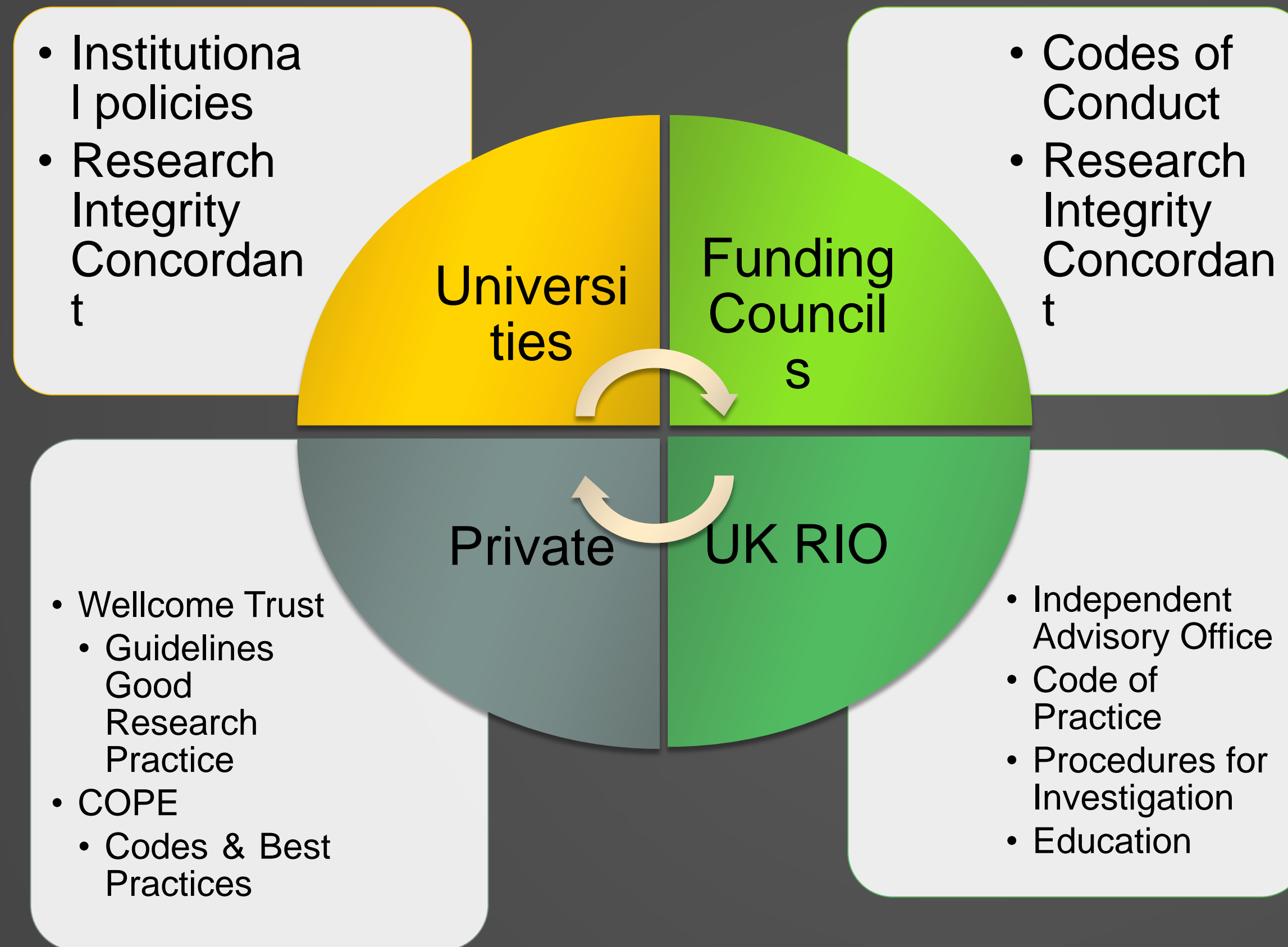
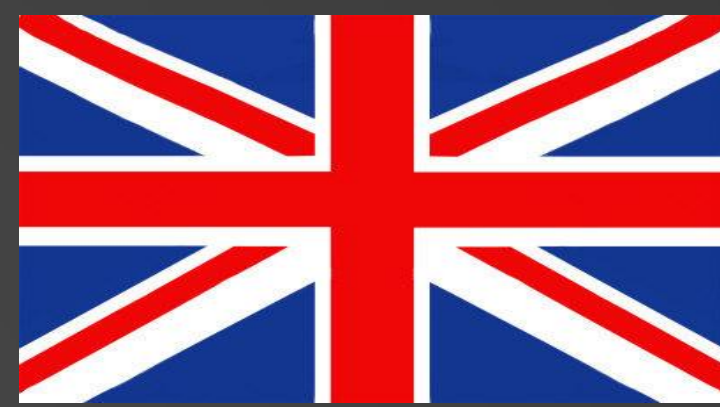
- Define misbehavior / misconduct
- Set standards for responding / investigating
- Require institutions to respond to misbehavior / misconduct
- Conduct their own investigations
- Set up research integrity offices

What have governments done?

- Nothing ~ exception, most governments have done something
- “Re-invented the wheel” ~ national differences, no global harmonization

Examples:

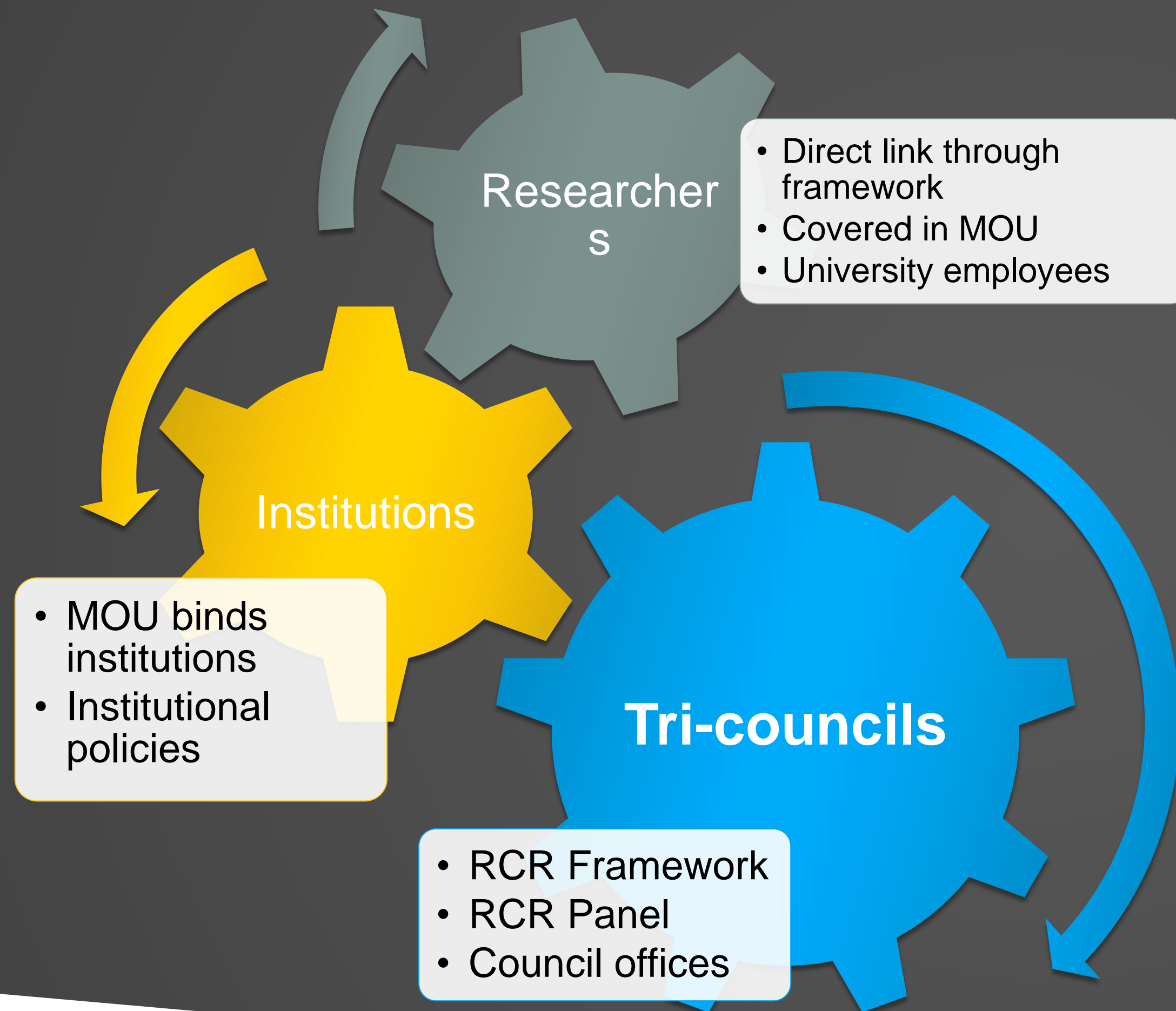
Decentralized: UK



► Summary

- ✦ Different codes
- ✦ Different procedures
- ✦ Divided authority
- ✦ Limited accountability

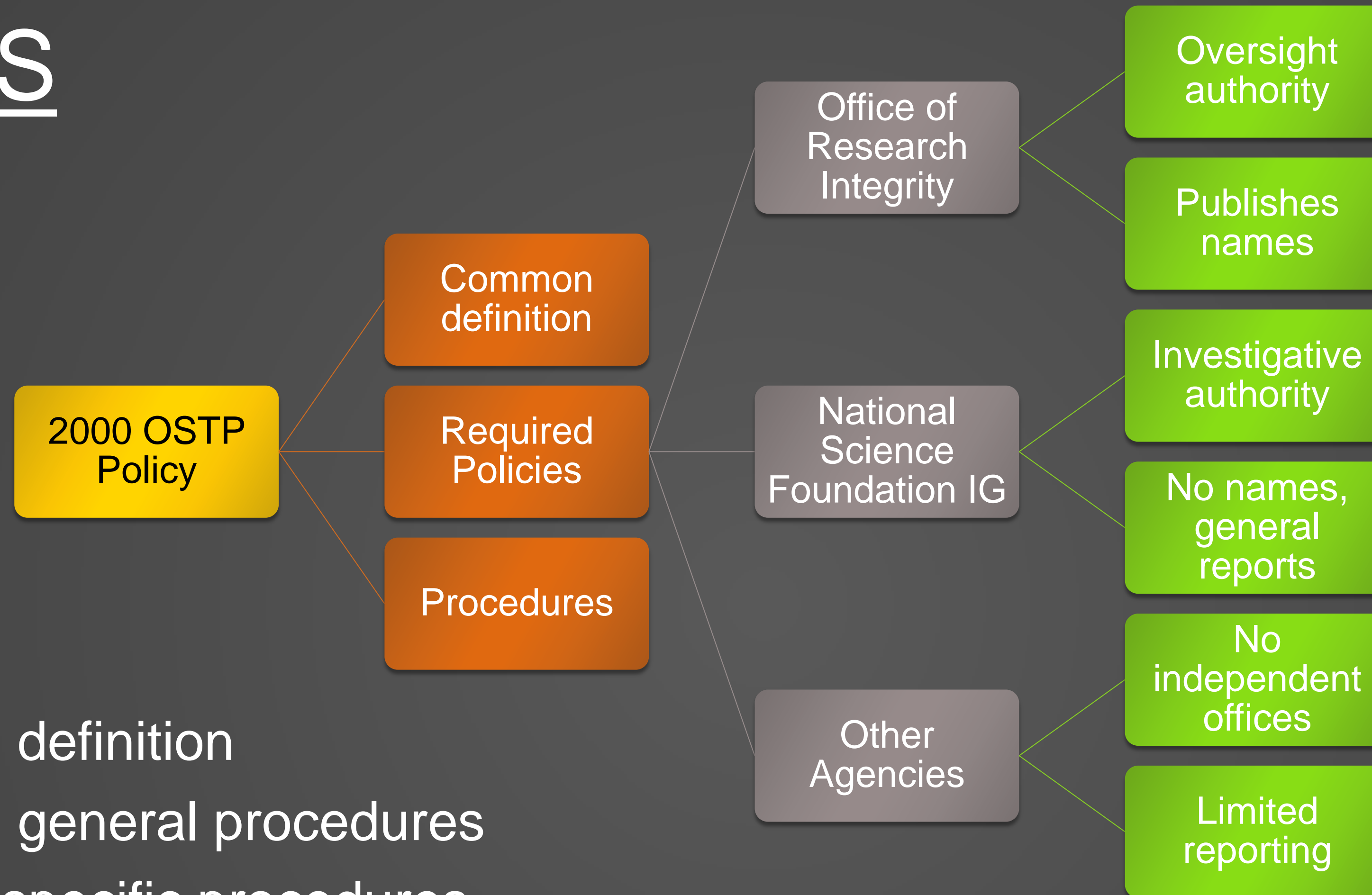
Centralized: Canada



► Summary

- ✦ Common Code
- ✦ Unified procedures
- ✦ Centralized authority
- ✦ Moderate accountability

Mixed: US



► Summary

- ✦ Common definition
- ✦ Common general procedures
- ✦ Different specific procedures
- ✦ Some accountability

FOSTERING INTEGRITY

- ✓ Definitions
- ✓ Codes of Conduct

Definitions ~ US narrow definition

1986 HHS

- (1) serious deviation, such as fabrication, falsification, or plagiarism, from accepted practices in carrying out research or in reporting the results of research; or (2) ...

1987 NSF:

- (1) fabrication, falsification, plagiarism, or other serious deviation from accepted practices in proposing, carrying out, or reporting results from research; (2) ...

2000 OSTP

- Research misconduct is defined as fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results
- [must be a] significant departure from accepted practices of the relevant research community

Definitions ~ Canada, broader definition

2011 Canada, Tri-Councils

- Researchers are responsible for using grant or award funds in accordance with the policies of the Agencies, including the Tri-Agency Financial Administration Guide and Agency grants and awards guides; and for providing true, complete and accurate information on documentation for expenditures from grant or award accounts.
- Breaches of Agency policies include, but are not limited to:
 - Fabrication, Falsification, Destruction of research records, Redundant Publications, Invalid authorship, Inadequate acknowledgement, Mismanagement of conflict of interest
 - Misrepresentation in agency applications and award funds
 - Breaches of agency policies

Canadian Tri-Council Code of Conduct

Using a high level of rigour in proposing and performing research....

Keeping complete and accurate records of data, methodologies and findings ...that will allow verification or replication of the work by others.

Referencing and, where applicable, obtaining permission for the use of all published and unpublished work....

Including as authors, with their consent, all those and only those who have materially or conceptually contributed to, and share responsibility for, the contents of the publication

Acknowledging, in addition to authors, all contributors and contributions to research, including writers, funders and sponsors.

Appropriately managing any real, potential or perceived conflict of

Australian Code for the Responsible Conduct of Research

Part A: Principles

- General Principles
- Management of Data
- Supervision of Trainees
- Publication
- Authorship
- Peer Review
- Conflict of Interest
- Collaborative Research

Breaches of the Code

- Misconduct
- Definitions
- Responsibilities
- Resolving Allegations

European Code of Conduct for Research Integrity

The European
Code of Conduct for
Research Integrity

EUROPEAN
SCIENCE
FOUNDATION

ALLEA
ALL European Academies

Principles

- **HONEST** in presenting goals and intentions...
- Research must be **RELIABLE**...
- **OBJECTIVITY** requires facts capable of proof...
- Research should be **INDEPENDENT** and **IMPARTIAL**
- All researchers have a **DUTY OF CARE** for humans, animals...
- ...must show **RESPONSIBILITY FOR FUTURE GENERATIONS**...

Misconduct:

- Fabrication, Falsification, Plagiarism and Failure to meet clear ethical and legal requirements

Minor misdemeanours

- ... should be corrected by teachers and mentors

Global: Singapore Statement



Preamble

- **Preamble:** The value and benefits of research are vitally dependent on the integrity of research. While there can be and are national and disciplinary differences in the way research is organized and conducted, there are also principles and professional responsibilities that are fundamental to the integrity of research wherever it is undertaken.

Principles

- **HONESTY** in all aspects of research
- **ACCOUNTABILITY** in the conduct of research
- **PROFESSIONAL COURTESY AND FAIRNESS** in working with others
- **GOOD STEWARDSHIP** of research on behalf of others

Responsibilities

► Global summary

- ✦ Common elements
- ✦ No consistency between codes
- ✦ Wide variation in definition of misconduct
- ✦ Goal: raise awareness and set basic standards
- ✦ Must be taught, adopted and followed to be effective

1. Integrity

2. Adherence to Regulations

3. Research Methods

4. Research Records

5. Research Findings

6. Authorship

7. Publication Acknowledgement

8. Peer Review

9. Conflict of Interest

10. Public Communication

11. Reporting Irresponsible Research Practices

12. Responding to Irresponsible Research Practices

13. Research Environments

14. Societal Considerations

FOSTERING EDUCATION & TRAINING

- ✓ Online
- ✓ Courses, seminars and lectures

Assumptions about RCR Training

BASIC PRINCIPLES (From US requirement)

- An integral part of all research training programs
- Appropriate to the career stage of the individuals receiving training
- Trainees should assume personal responsibility for RCR instruction
- Faculty should participate in ways that allow them to serve as role models
- Should include face-to-face discussions by course participants and faculty
- Carefully evaluated in all NIH grant applications

CHALLENGES:

- Faculty often are not best role models or qualified RCR instructors
- Face-to-face instruction is inconsistent and effectiveness not confirmed
- Asking learners to design their own training may not be the best approach

Web training

CITI Collaborative Institutional Training Initiative

- ▶ Globally used
 - ✦ 9 languages including Portuguese
 - ✦ 30+ courses
 - ✦ 1,000+ institutional members
 - ✦ 1,000,000+ courses taken
- ▶ Online training
 - ✦ Primarily text
 - ✦ Minimum interaction
 - ✦ Basic tests

International RI Course (Epigeum)*

► Interactive Main content on line

- ✦ Interact rather than read
- ✦ Links to additional reading
- ✦ Suggestions for additional learning



*Epigeum course, Steneck lead advisor

Blended/Active Web-based

Assumptions

- Web is best way to assure consistent, comprehensive coverage
- Web training can be made engaging and rewarding
- Web can be linked to and enhance additional training

Methods

- Created by Authors (6) and Development Group (23)
- Design to be delivered on university learning management systems (LMS)
- New international RCR course available in July 2012

Assessment

- Short quizzes at the end of sections
- Evaluation of in-person learning an options
- Creating a “Research Integrity Self-Assessment Text”

*Epigeum course, Steneck lead advisor

Screen Design

1. Welcome

2. Orientation

- i. Introduction
- ii. Learning outcomes
- iii. Course map
- iv. Author profiles

3. Course files

- i. Chapter 1: Welcome to the University Leadership and Management Programme
 - a. Introduction to the programme
 - b. The structure of the programme
 - c. Some guiding principles
- ii. Chapter 2: The higher education context
 - a. The role of universities
 - b. Trends within higher education
 - c. Leadership and management within higher education
- iii. Chapter 3: Your personal development
 - a. Learning to be an effective leader and manager
 - b. The importance of personal management
 - c. Personal management continued
 - d. A personal appraisal

4. Closing

- i. ● Course summary
- ii. Resource bank
- iii. References

5. Course quiz

- i. Course quiz



Screen challenge

In brief – why a course on research integrity?



Why research integrity (RI)?

Why is responsibility in research important? For the simple reason that responsible behavior is a fundamental component of quality research. Research integrity is not something you go back and consider when everything else is done, nor is it a set of bureaucratic hoops to jump through. Sound, reliable research *begins* with knowing and meeting your responsibilities as a researcher.

Our goal in writing this course is to provide you with a basic overview of your responsibilities. It is then up to you to meet them. By the end of the course, you should be able to:

- Know and explain the key responsibilities you have as a researcher
- Identify the challenges you could face in meeting those responsibilities
- Be aware of strategies for dealing with pressures and difficult situations.

Useful information

You will find pop-up boxes of this nature spread throughout the course...

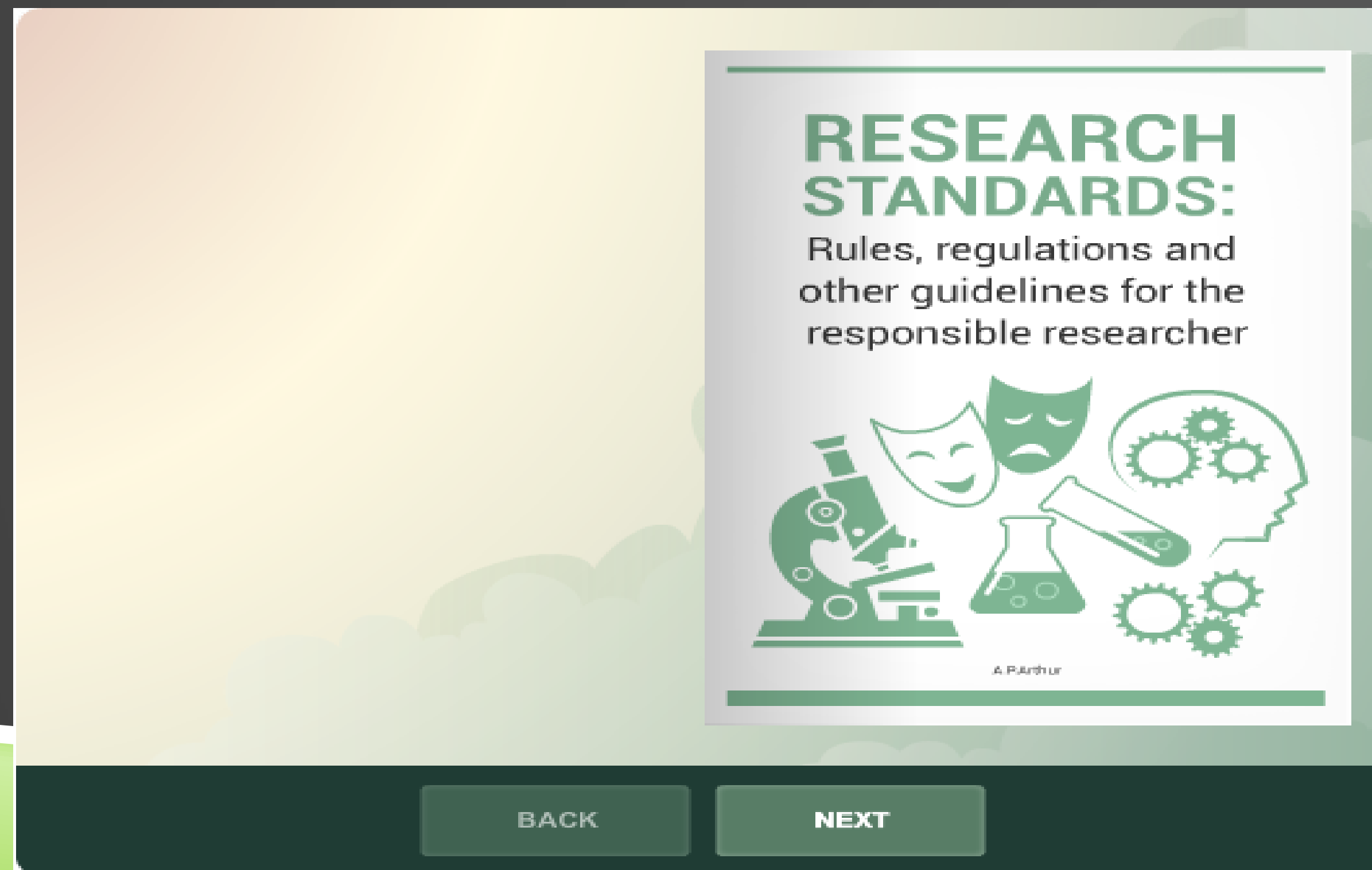
[Click for more](#)

Additional
Learning

Content/Activities

Navigation

Interactive



Most standards (rules, regulations and other guidelines) are on the web, but you have to search for them. Look for links throughout this course, or go to the 'Resource bank' and 'Guide to research policies and guidelines' screens at the end of the course for a list of the different standards covered.

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Contents

Government standards . . .	4
Institutional standards . . .	6
Professional standards . . .	8
Commonly accepted practices . . .	10
Personal ethics . . .	11

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NEXT

Government standards

Government standards set out society's expectations for responsible research. They can be local, state or regional, national and even international.

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*Areas covered by government rules and regulations**

Research misconduct
Use of human and animals subjects in research
Conflict of interest
Data protection and sharing
Laboratory management
Laboratory safety
Employment practices
Intellectual property

** Rules and regulations vary by country and level of government.*

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NEXT

**Areas covered by institutional rules
and regulations***

Research integrity/misconduct
Laboratory management and safety
Employment practices
Intellectual property
Consulting
Academic freedom

** Individual institutions may have only
some or no rules governing research.*

6

7

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NEXT

Professional standards

Most professional research organizations set some standards for membership. Those with a strong service component usually have 'codes of conduct'. Those that publish journals have policies on publication practices.

8

Areas covered by professional standards

Membership qualifications
Codes of conduct
Authorship and publication
Peer review
Expert opinion and advocacy

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NEXT

Commonly accepted practices

Some research practices are 'commonly accepted' but backed by no official authority. They can be local, institutional or professional. They are not necessarily in line with responsible practice. Check with an independent authority before doing something just because it is 'commonly accepted'.

10

Personal ethics

Your own sense of right and wrong is also an important standard. Use the 'in-the-news' check to weigh decisions: would you make the same decision if you knew your choice would receive front-page coverage the following day?

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NEXT

In person for postdoc (example)

Assumptions

Most postdocs have already had basic RCR instruction

Will learn best if training is relevant to their research

Goal: a) learn RCR and b) become an RCR mentor

Methods

Four sessions: Introduction, Define Project, Research Project, Present

3 test sites, 2 control sites

Assessment

Pre/post-course test of knowledge

Post-course survey

Instructor focus groups and research team meeting

Problems & projects



Global status of education & training

Varies by country

- Required in US
- Recommended in a few countries
- Not formally provided in most countries

Benefit of training has not been demonstrated

- Quality varies, content is not reliable
- Often not valued
- If taught as a competitive skill, can have negative consequences

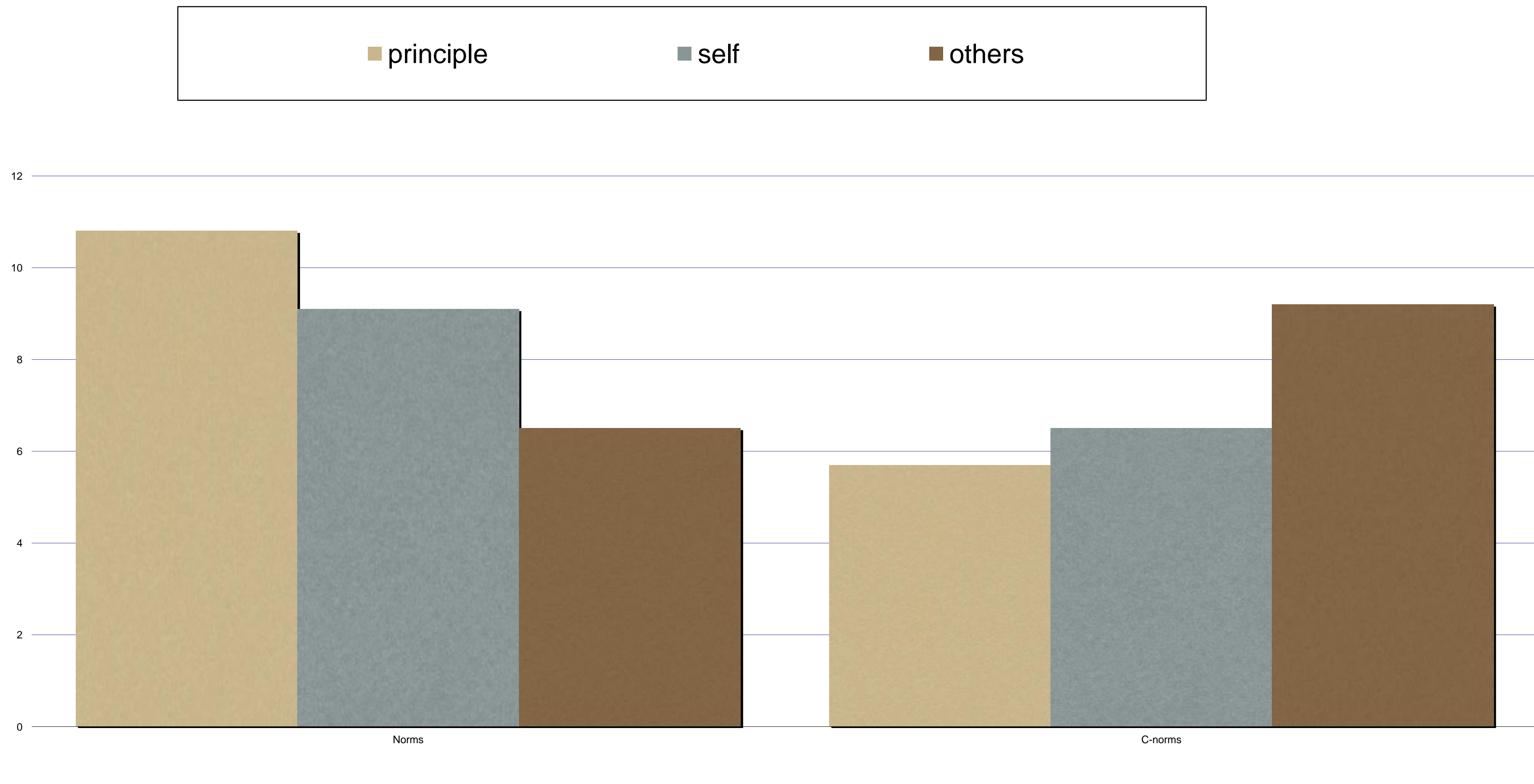
Importance will likely increase

Misconduct can be “justified”

► Attitudes to responsible conduct of research:

Norms	Counternorms
Share	Secret
Empirical	Personal
Advance science	Self-interest
Skeptical	Dogmatic

Adhering to Norms/Counternorms



OBRIGADO

Eu Para mais informações

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