



# Cross-Border Research Misconduct: Challenges & Opportunities

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*Co-Chair, Research Integrity Committee  
President's Office*

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**Asian and Pacific Rim Research Integrity (APRI)  
Network Meeting  
February 20-22, 2017, Hong Kong**

# Points to Consider

## Can the Montreal Statement be Realized?

### The Challenges within Borders

- Organizational drivers of misconduct
- Cultural constructions that define success

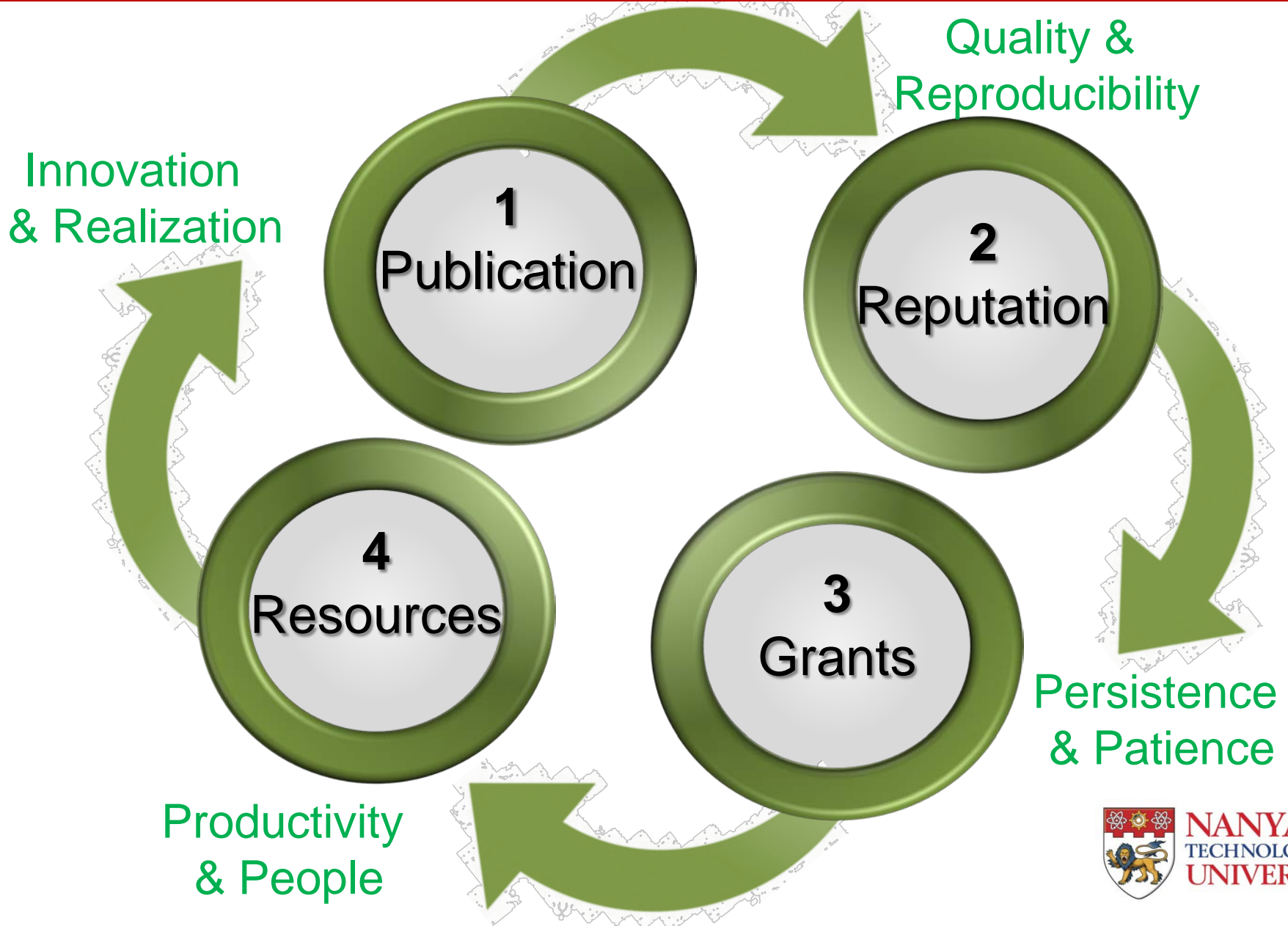
### Proactive Opportunities Across Borders

- Harmonizing (re-)education programs
- Reducing metric-driven career dependency
- Publicizing and punishing poor conduct

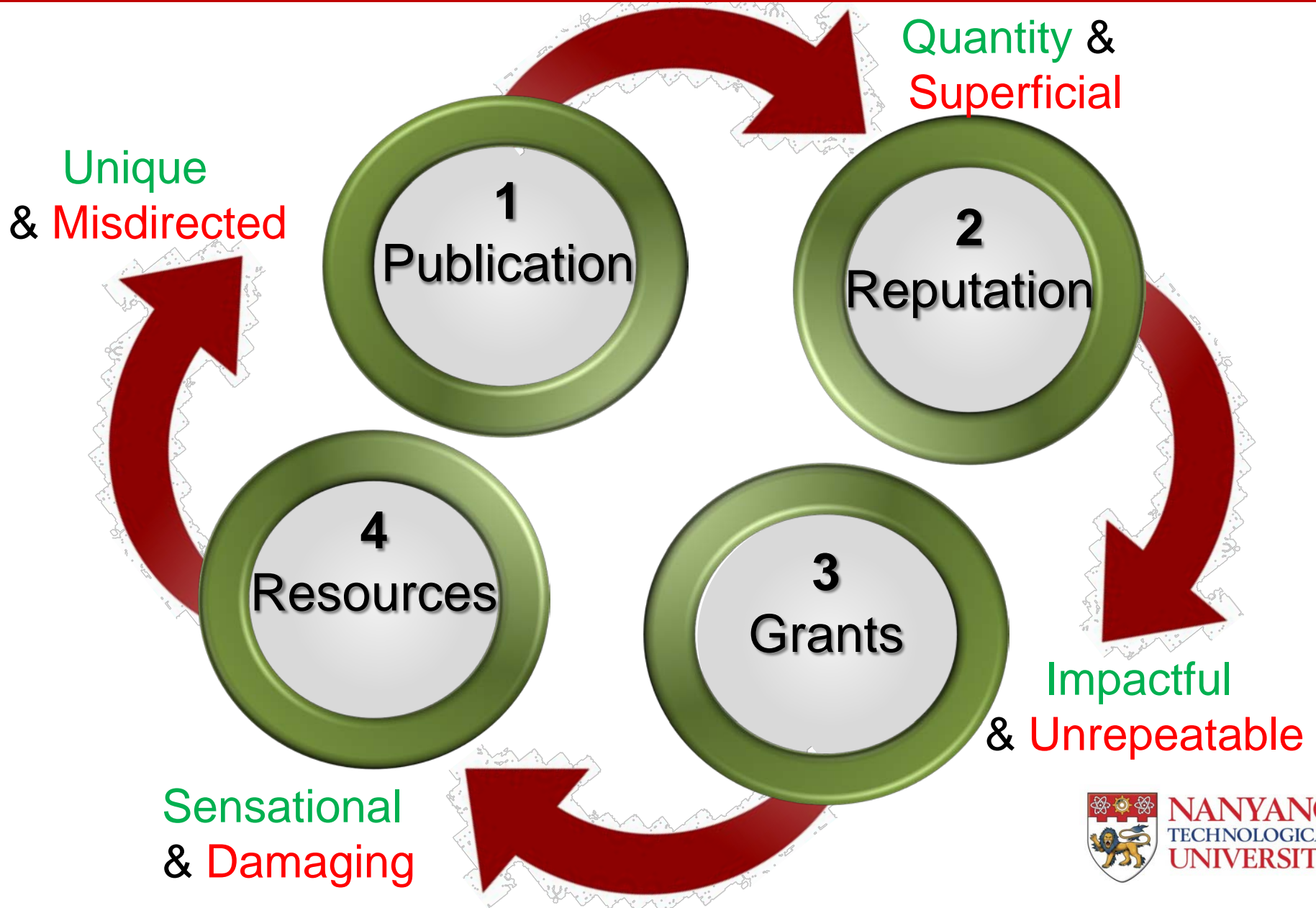
### Reactive Opportunities Across Borders

- Coordinating institutional policies
- Increasing penalties

# 'Good' Science



# 'Good-and-Bad' Science



# The Protagonists

## Who will get tenure first?

### The Champion

#### Desires:

- Publications
- Reputation
- Grants
- Resources



### The Contender

#### Desires:

- Publications
- Reputation
- Grants
- Resources

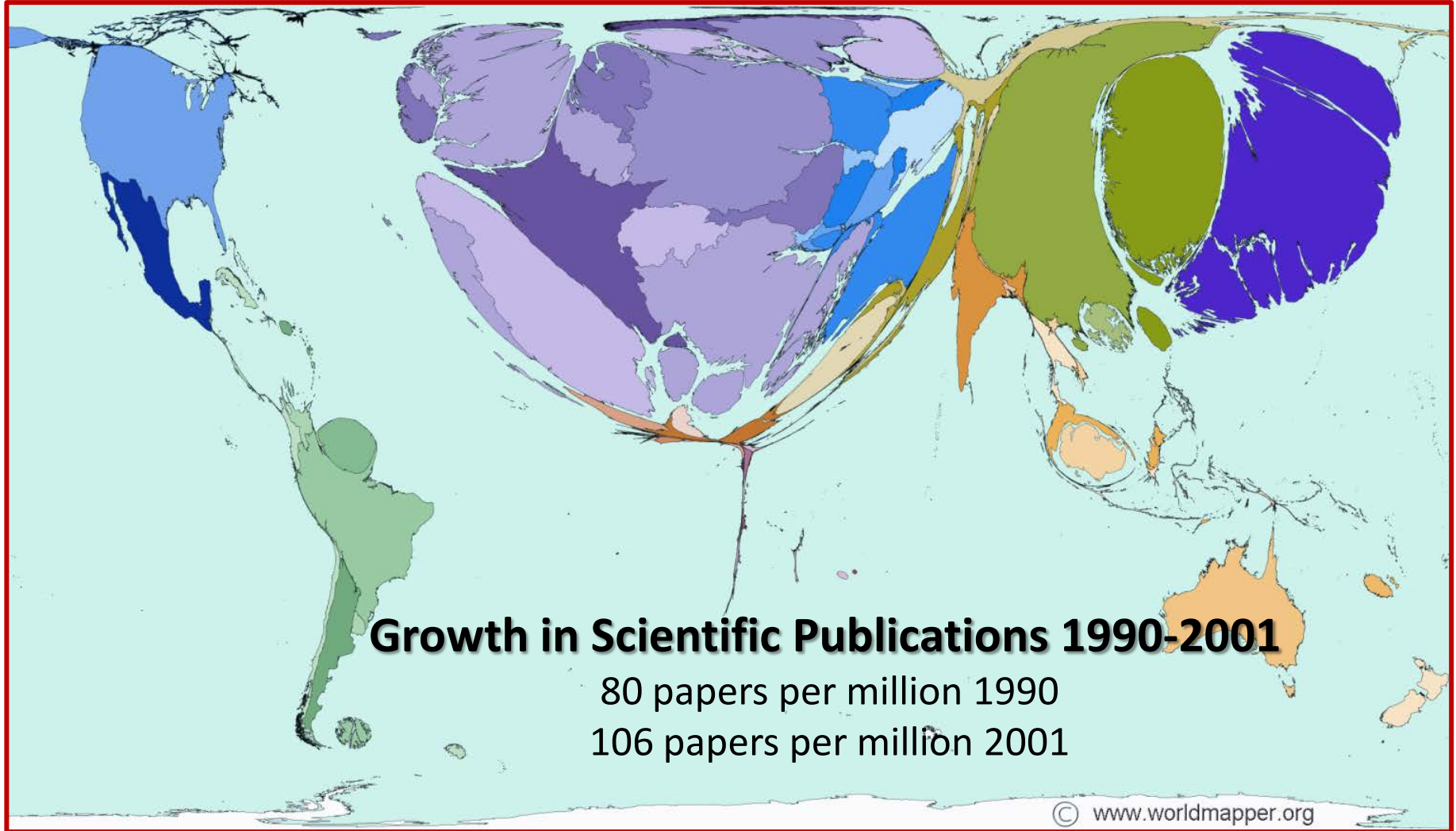
#### By:

- Publishing fast & often
- Breakthrough science
- Winning large grants
- Amassing resources

#### By:

- Publishing steadily
- Solid science
- Winning sufficient grants
- Deploying resources

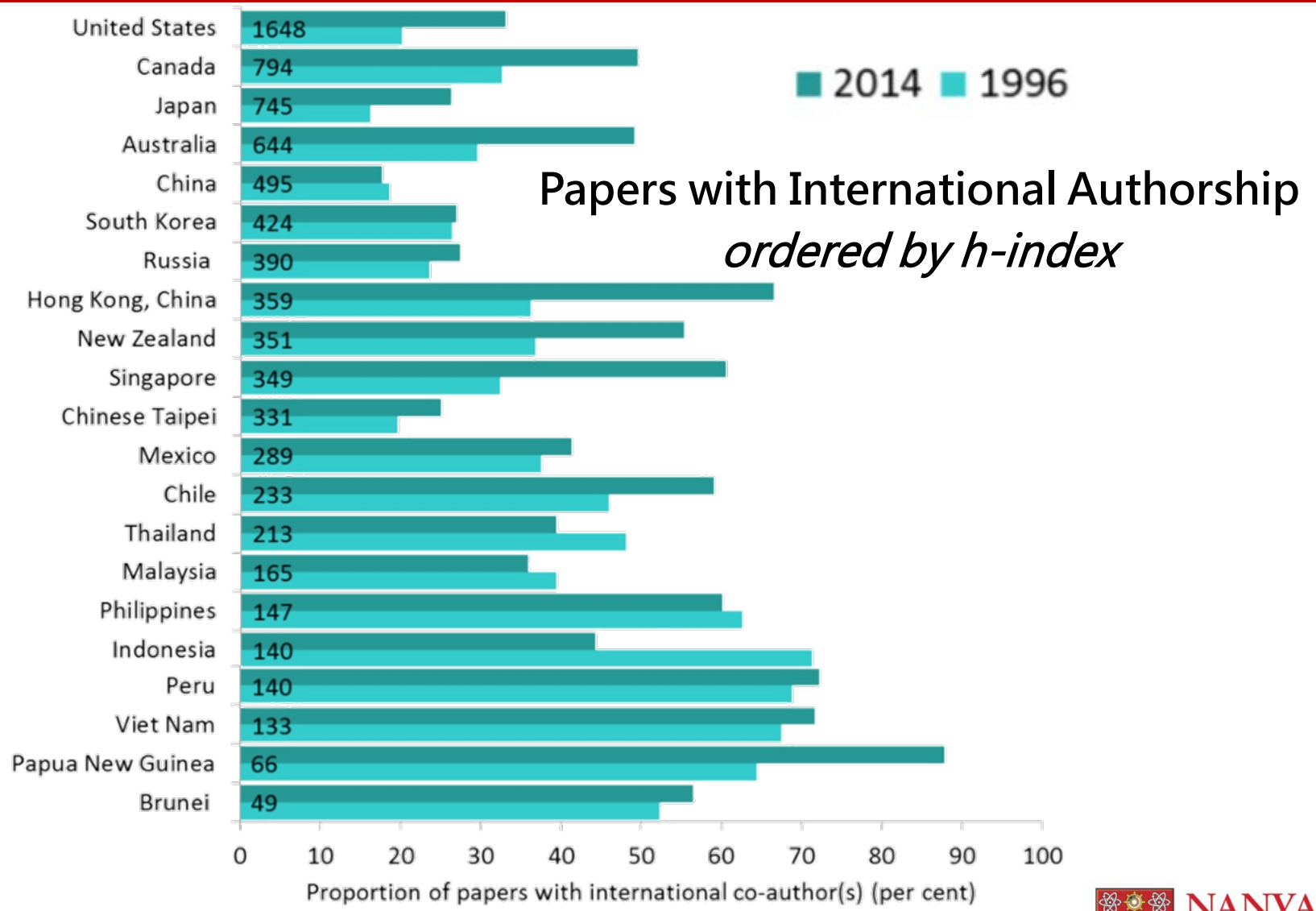
# Cross-Border Misconduct: Publications



Worldmapper

<http://www.worldmapper.org/display.php?selected=206>

# Cross Border Misconduct: Authorship

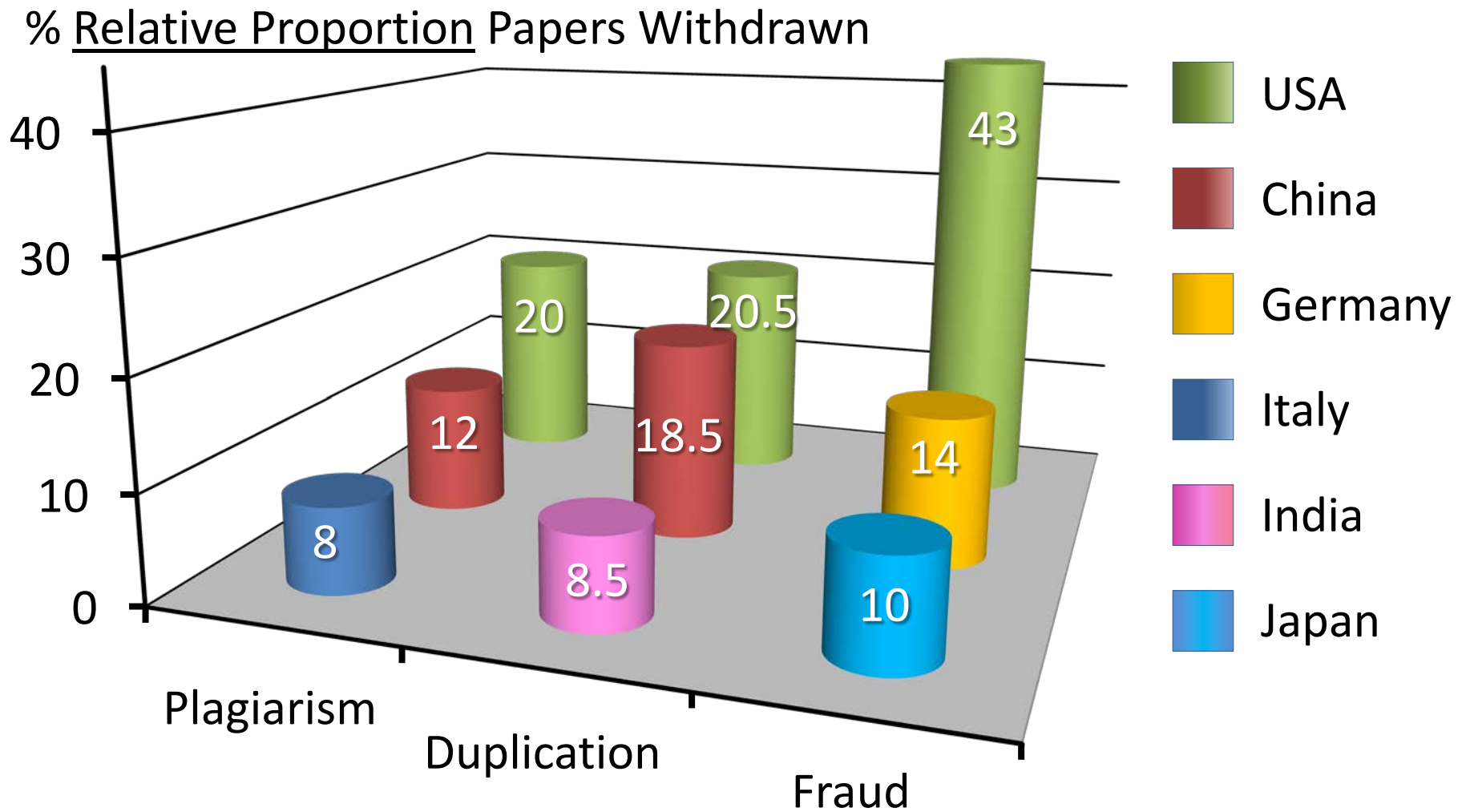


Researcher Mobility Amongst APEC, October 2015

[https://docs.education.gov.au/system/files/doc/other/apec\\_researcher\\_mobility\\_workshop\\_report.pdf](https://docs.education.gov.au/system/files/doc/other/apec_researcher_mobility_workshop_report.pdf)



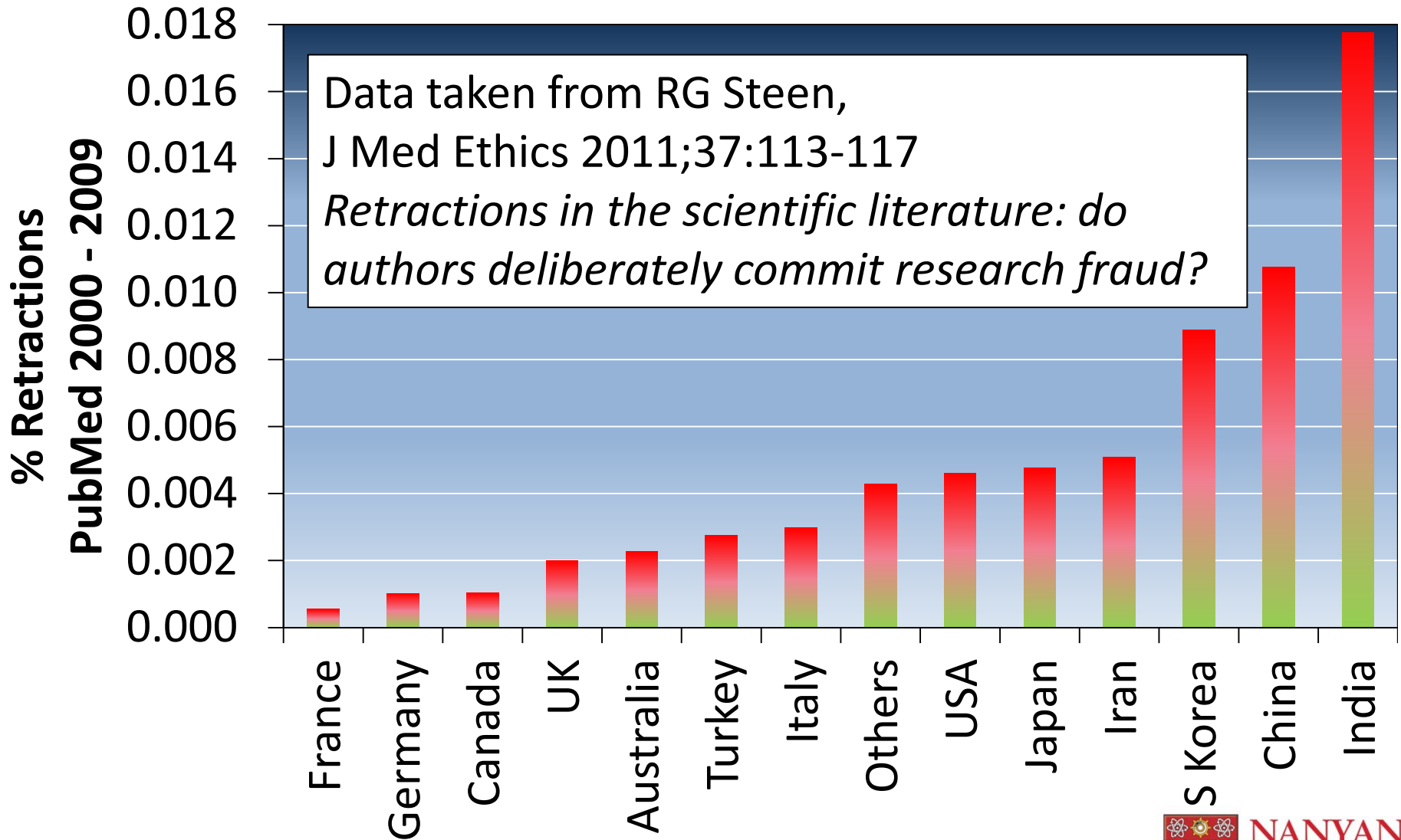
# Cross-Border Misconduct: Hotspots?



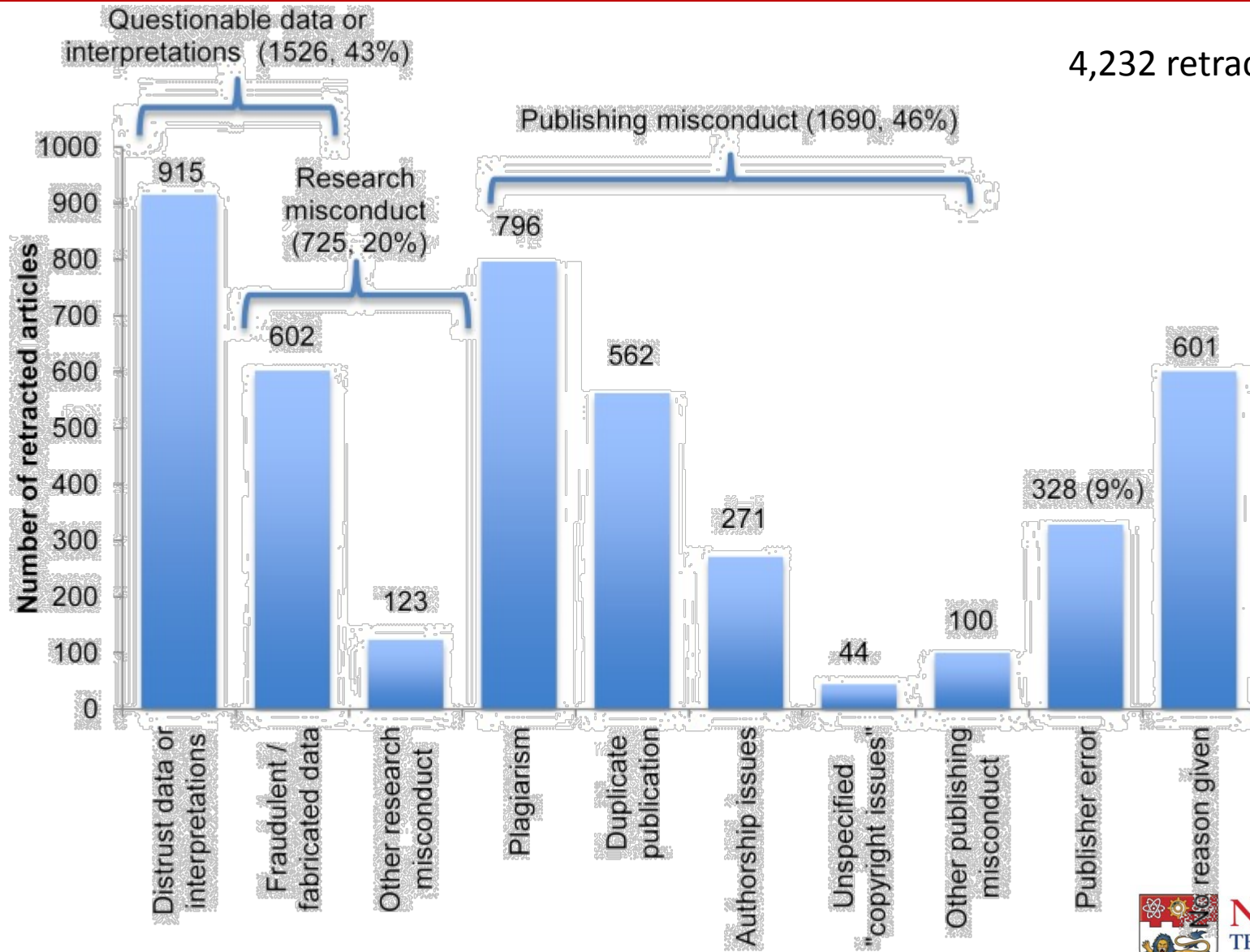
Data extracted from Fang et al., "Misconduct accounts for the majority of retracted scientific publications", PNAS, 109, 117028, 2012.



# Cross-Border Misconduct: Hotspots?



# Retraction: A Proxy for Misconduct



# What does the Montreal Statement offer?

The Montreal Statement is a collation of 20 clauses for good governance in any international research partnership.

## Only Clause 19 addresses Irresponsible Research Practices

*'The collaboration as a whole should have procedures in place for responding to allegations of misconduct or other irresponsible research practice by any of its members. Collaborating partners should promptly take appropriate action when misconduct or other irresponsible research practice by any partner is suspected or confirmed.'*

# Challenge 1: Plagiarism

The worst excesses of plagiarism are driven by institutional practices and cultural custom:

- Copying may be seen as an acceptable way to learn and master a subject

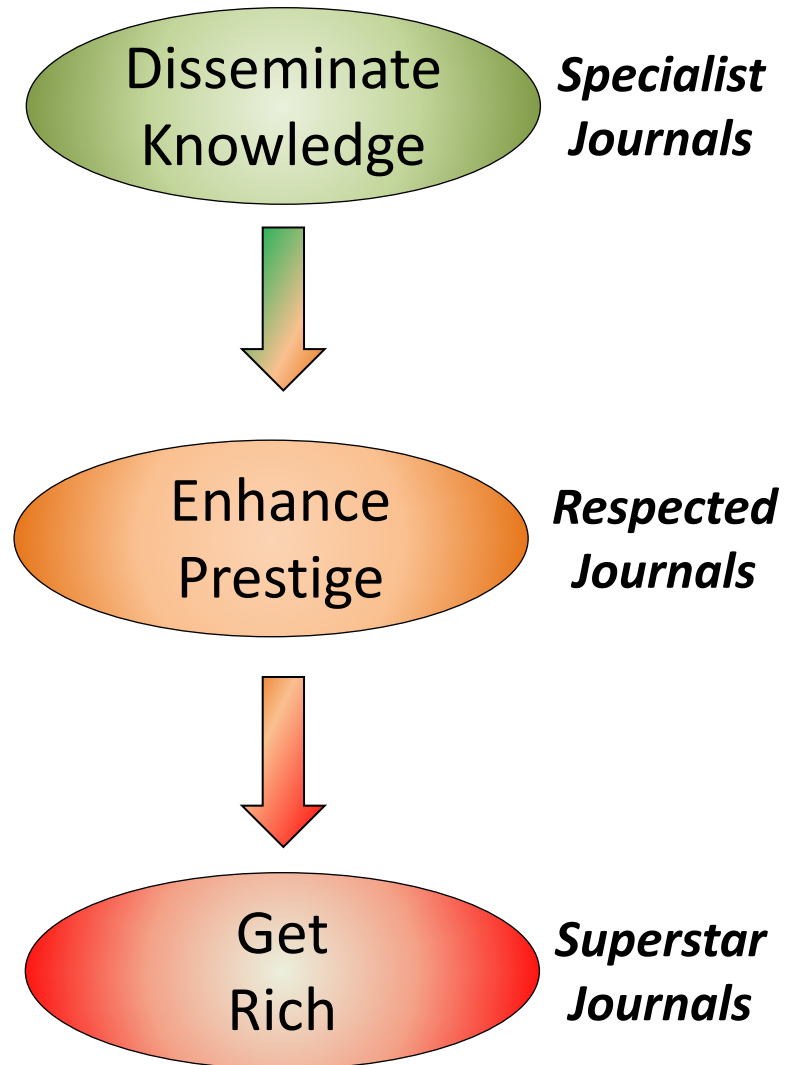
**the more you copy the more you learn**

- Copying may be encouraged in systems that pay professors based on the number, rather than quality, of publications.

**the more you copy the more you earn**

# Challenge 2: Pay-per-Paper

Scientists can publish to:



## Publication Incentives

Indexed in ISTP	US\$92
Indexed in EI	US\$275
Impact factor < 1	US\$306
$1 \geq \text{IF} < 3$	US\$458
$3 \geq \text{IF} < 5$	US\$611
$5 \geq \text{IF} < 10$	US\$764
$\text{IF} \geq 10$	US\$2,139
<i>Science or Nature</i>	US\$30,562

# Challenge 3: Publication Haste

As long as authors are (mostly) rewarded for publishing many articles and editors are (mostly) rewarded for publishing them rapidly, new ways of gaming the traditional publication models will be invented more quickly than new control measures can be put in place.

*Charlotte J. Haug, M.D., Ph.D., N Engl J Med 2015; 373:2393-2395  
Peer-Review Fraud — Hacking the Scientific Publication Process*

## 19<sup>TH</sup> CENTURY SCIENTIST

I must find the **explanation** for this phenomenon in order to truly understand Nature...



## 21<sup>ST</sup> CENTURY SCIENTIST

I must get the **result** that fits my narrative so I can get my paper into Nature...



[Facebook.com/pedromics](https://www.facebook.com/pedromics)

# Challenge 4: Career Progression

- Using metrics as a proxy for performance
  - Counting papers and rewarding over-production
  - Correlating the h-index with quality
- Poor enforcement of authorship policies
  - Gift authorship, especially of eminent visitors, to improve chance of publication
  - Ghost authorship, especially of second language scientists, where true attribution is disguised
- Uncritical deference in the presence of scientific stars
  - Recruitment skewed by *Nature* and *Science* papers
  - Less thorough evaluation of the outputs of 'ivy league' progeny
- Research driven by answers, not questions
  - 'Good' journals not publishing replicate work
  - 'Poor' journals publishing anything

# Challenge 5: Funding Criteria

- Research scientist versus research scientist
  - Grant funds are limited
  - Funded areas not in field of expertise
- One research grant is never enough
  - Success breeds success
  - Stretched to deliver
- Careers depend on an unbroken string of grant success
  - Funding priorities change
  - Personal circumstances change
- Institutional penalties for failed grant proposals
  - Loss of resources
  - Denial of tenure
- Thoughtful reflection is consumed by grantsmanship
  - Less time to think
  - Less time to supervise research



# Challenge 6: Nothing to See Here



*"It is different in the UK. Studies are approved by research ethic committees before they can go ahead and I **don't think there would ever be a case where they would allow a study to proceed** if there was a chance that the drug company could prevent publication of the findings."*

**Dr Michael Wilks**

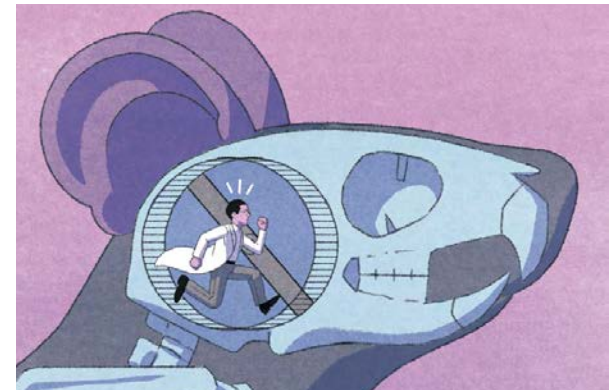
Chairman , British Medical Association Ethics Committee

26 October 2002 [http://scientific-misconduct.blogspot.sg/2007\\_10\\_01\\_archive.html](http://scientific-misconduct.blogspot.sg/2007_10_01_archive.html)

“...Science...our one source of objective knowledge, is in deep trouble... much of this supposed knowledge is turning out to be contestable, unreliable, unusable, or flat-out wrong.

**Daniel Sarewitz**

The New Atlantis, Spring/Summer, 2016



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# Opportunity 1: Inoculating Science

## ‘Stick-to-the-Basics’

- Staff
- Students

## ‘Good-Manners-Cost-Nothing’

- Provide role models
- Modesty trumps hubris



## ‘The-Mind-Plays-Tricks’

- Fear of failure
- Perfectionism

## ‘Winning-isn’t-Everything’

Publications ■ Funding ■ Positions ■ Prestige

# Opportunity 2: Whistleblowers

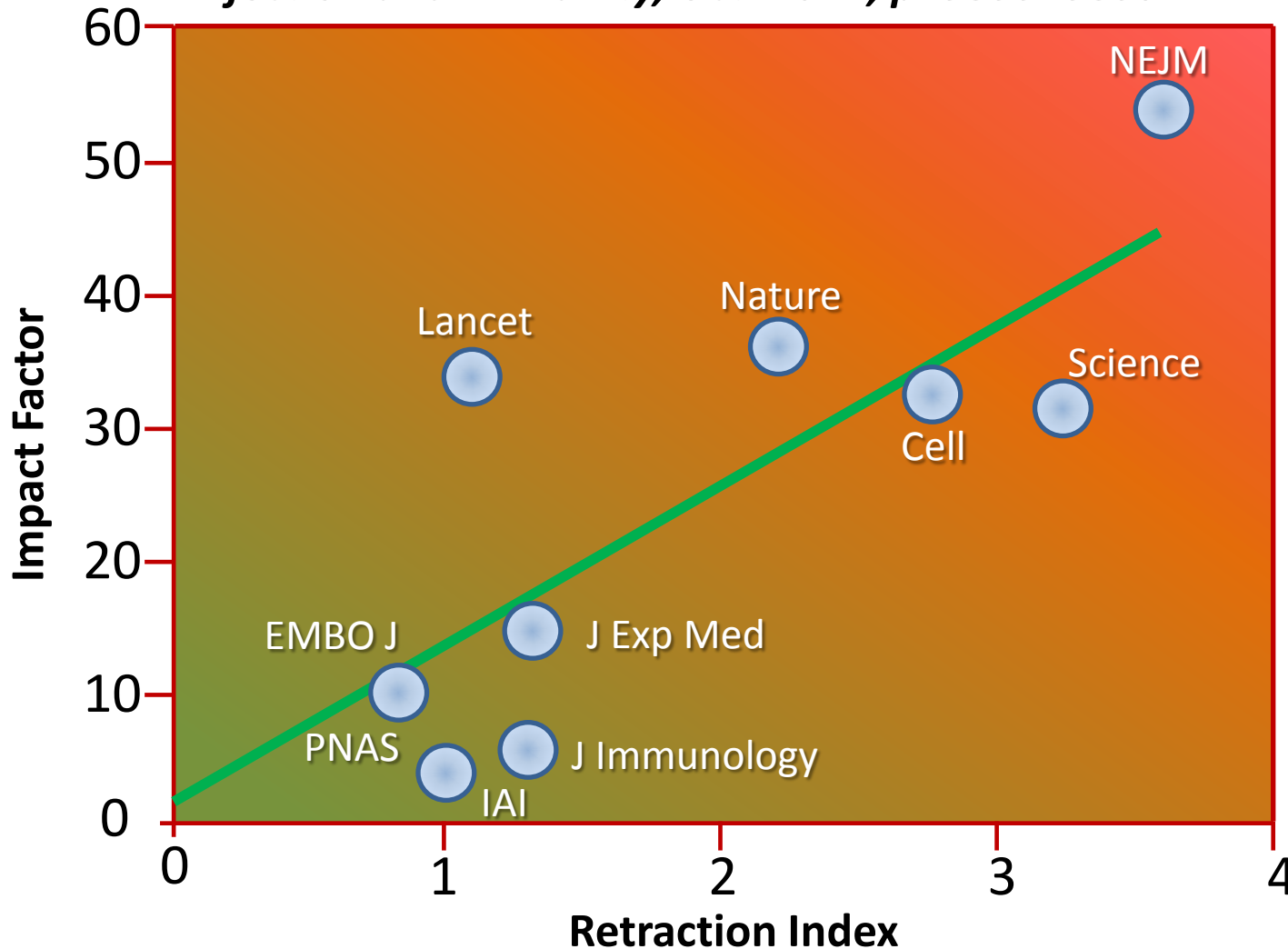
## Whistleblowing is a key defense against research misconduct:

- the role of whistleblowing as a deterrent should be publicized and widely recognized
- organizations should promote the notion that whistleblowing is professionally responsible
- protections should be offered to whistleblowers, but vexatious reports should be punished
- managers should proactively respond to whistleblowers in a timely fashion



# Opportunity 3: A Retraction Index?

*Ferric C. Fang, Arturo Casadevall, R. P. Morrison,  
Infection and Immunity, Oct. 2011, p. 3855–3859*



# Opportunity 4: Don't Accept Excuses

**Most apologies tend to be worded in such a way that minimizes the blame on the person accused of misconduct.**

**Poehlman:** “I had placed myself, in all honesty, in a situation, in an academic position which the amount of grants that you held basically determined one’s self-worth.” *New York Times*

**Cheorl-Ho Kim:** Felt shame states he will send forward his letter of apology to former and present employers. *Neurochemical Research (Vol 31: 109–120, 2006)*

**Wolfgang Kopp:** Denies wrong doing, but states he is sorry for not citing the passages he is accused of plagiarizing. *Metabolism (Vol 52: 840-844, 2003)*

**Huang Gwo-Feng:** First time writing papers and did not know that duplicating English sentences from other writers was wrong. *Gait and Posture (Vol 12: 162-168, 2000)*

<http://libraries.rbhs.rutgers.edu/rwjlbweb/posters/scimisconduct.html>



# Opportunity 5: Punishment to Fit Crime

**Quite simply, research misconduct is cheating.**

In Singapore sentencing guidelines for cheating are:

- Simple cheating when the quantum is small and there are no aggravating factors leads to imposition of a fine.
- Aggravated (deliberate) cheating leads to a fine and imprisonment.  
*e.g. Company director inflated the price of the goods to obtain a higher loan quantum - one day's imprisonment and fined \$10,000.*
- Even if a cheating offence does not involve money, a substantial term of imprisonment would be imposed if well organized and having far-reaching impact if left unchecked.
- In cases with multiple offenders, sentences properly reflect the difference in culpability.

Quantum	Sentence
\$30,000–\$60,000	12–18 months
\$100,000–\$300,000	24–36 months
\$300,000–\$500,000	36–48 months

**Misuse of research funds is a criminal offence**



# Beyond Montreal...The Amsterdam Agenda

## A Driver for Transparency + Reporting + Benchmarking

- Create an overarching statement of zero-tolerance
- Engage all players
  - Researchers
  - Funding Agencies
  - Professional Associations
  - Research Institutions
  - Governments
  - Journals
- Promote institutional procedures and safeguards by annual publication of
  - Number of integrity and ethics breaches
  - Monetary misuse
  - Nature of misconduct cases
  - Educational programs

**The Goal:** Create an international consortia of universities and national laboratories to annually and quantitatively report research misconduct and share best practices in education and managing integrity cases.





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## **Montreal Statement:**

*'Fostering the integrity of collaborative research is the responsibility of all individual and institutional partners.'*

<http://www.onozomi.com/2015/08/21/sumo/>





# Cross-Border Research Challenges and Opportunities – Some Advice from Canada

**Susan Zimmerman**

**Secretariat on Responsible Conduct of  
Research – Canada**

**APRI**

**Hong Kong**

**February 22, 2017**

**PANEL ON RESPONSIBLE  
CONDUCT OF RESEARCH**

# What is the Secretariat on Responsible Conduct of Research?

Serves Canada's three main research funding agencies:

- Canadian Institutes of Health Research
- Natural Sciences and Engineering Council of Canada
- Social Sciences and Humanities Research Council of Canada

# Mandate of Secretariat

1. responsible conduct of research (research integrity)
  - Guidance document: *Tri-Agency Framework on Responsible Conduct of Research*
2. ethics of human research
  - Guidance document: *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*

# Cross-border challenges & opportunities



- **AVOID PROBLEMS YOU CAN FORESEE**
- **ADDRESS PROBLEMS THAT ARISE**

# AVOID PROBLEMS YOU CAN FORESEE

- Communicate
  - What are the rules, policies, customs that apply to different researchers? (Mtl Statement #7, #13)
- Identify areas of possible or clear conflict
- Resolve those conflicts
  - Can the team agree on what rules will apply? Is there flexibility?
  - If resolution not possible in all areas, is the collaboration still feasible? (Mtl Statement #6)

# ADDRESS PROBLEMS THAT ARISE

- Establish a safe place where individuals can express their concerns about questionable research practices
- Address allegations of possible lapses in research integrity **promptly** and **fairly** (Mtl Statement #14)
- In determining a remedy for a breach of responsible conduct of research, consider:
  - impact on the public record
  - impact on the researcher
- Choose remedy that is **proportionate** to breach

# THANK YOU



## SECRETARIAT ON RESPONSIBLE CONDUCT OF RESEARCH

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