From the individual to the collective responsibility on research integrity: a view from the Director’s office
“Researchers’ and administrators’ roles in assuring research integrity”

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Number of retracted articles for specific causes by year of retraction.

1.4 Million papers published per year

200-300 papers retracted per year (2007-2011)

25% of publications in the Health and Life Sciences (350,000 per year)

Biomedical research 85% difficult or non reproducible

“One of higher education’s essential responsibilities' is to ensure the integrity of scientific research” M. Andreson, 2008.

What do we teach and how do we teach the next generation of scientists, i.e., graduate students.

Research institutions have a collective responsibility to Educate the next generation of Scientists
1. **Detection**: External news

2. **Denial**: Can not happen to us

3. **Reality check**: External pressure

4. **Assessment**: Internal evaluation

5. **Decision making**: Internal implementation

6. **Future path**: Preventive actions
1. Detection: External news
Allegations:

- Duplication of figures within a paper (more than one publication)
- Duplication of data between papers
- Manipulation of data (?)
- Self plagiarism (?)
- Repeated negligence in data presentation

New researcher recently arrived from abroad considered a young rising STAR!!
2. Denial: Can not happen to us
Problems

Solutions

Is retraction an implicit Acceptance of guilt and a quick way out?

If figures duplication were due to “honest” mistake the paper should never have been retracted but should the figures should have been corrected...

Retraction by itself does not resolve the issue neither for the scientists nor for the Journal...

Post retraction citations continue years after the event.
3. Reality: External pressure

**Scientific Misconduct**
- Fabrication
- Falsification
- Plagiarism

**What about?**

**THE LANCET (1999) Nylenna et al. Definition of Scientific dishonesty:**

“Intention or gross negligence leading to falsification or distortion of the scientific message or a false credit or emphasis given to a scientist (1992)”
How to measure fraud levels?

Which are the pressures or motivations?

FRAUD-O-METER™
(beta version 2.0)

- Gross Negligence
- Reckless Disregard
- Willful Blindness
- Deceptive Intent
- Inadverrence

Motive/Pressure

- My theory/ reasoning is sound, the data is wrong/skewed!
- It’s publish or perish!
- I control the data and can easily change them.

Fraud Triangle (by Donald R. Cressey) adapted to Scientific Misconduct

Research Integrity - Amsterdam 2017
4. Assessment: Internal evaluation

Board of Directors decision:

- to appoint and external/independent commission to evaluate all the allegations, interview all the parties involved and draft a recommendation that the institute board of directors will adopt and implement.

- External commission composed of 4 professors from different national and international Universities.

- Access to all the documentation, explanation and original raw data from the papers in question.

- Interview the scientist in question.

- The work took most of 5 months and was delivered to us as a recommendation.
1.- The researcher demonstrated negligence in the treatment of data that were included in the articles published in .... (2009), .... (2011) and ... (2015) of which he/she is the first author. This negligent behavior is acknowledged by the researcher which he/she retracts and justifies to the scientific community in relation to the article in ...... (full retraction). Subsequently, a similar conduct resulted in the addition of a corrigendum to his/her publication in ...... (2015).

2. In spite of the repeated nature of the error indicated above, fraud and data manipulation were not detected and the errors that were committed did not question the scientific content of the publications.

3. The errors in his/her conduct appear to be the result of poor supervision when she was a PhD student, namely in terms of the rules that are the basis of credibility of scientific work, an integral part of the training in good practices that must be a central part of the scientific education of young researchers.

Recommendation:

“Taking into account all of the above and the attitude of the researcher during the interview with the members of the External Commission, during which he/she fully demonstrated absence of any fraudulent attitude or to escape from the truth, the commission considers that the researcher should be given an opportunity to continue with his/her research projects, integrated in a Research Group already established, under the supervision of the group leader, so that, in the name of scientific truth, he/she can demonstrate his/her maturity and integrity as a scientist and his/her capacity as a supervisor and teacher of young scientists.”
5. Decision: Internal implementation

- What do words really mean?
- How do you translate a recommendation into action?
- How do you inform the institute about the outcome of the external commission?

There are no winners only survivors !!! (Gifford 1930)
The response of the institution
5. Decision: Internal implementation

- Person re-integrated into a research group
- Under the leadership of a research group leader
- All projects co-PI
- All young researchers co-supervised
- No defined period for this action (at least 2 years)
6. Future: Preventive actions already in place

1. A one day workshop on responsible conduct in research open to the entire institute community.

2. Two-day EMBO workshop on responsible conduct in research for young PIs.

3. Working group to develop authorship guidelines was set up by the Director.

4. An external ethics advisor has now been officially appointed.

5. Introduction to ethics and research integrity for PhD students to become mandatory.
Our mission:

a) Carry out research at the highest international level
b) Educate graduate students to the higher ethical and technical standards for the next generation of scientists
c) Promote knowledge transfer and the economic value of research
d) Engage with society to promote the understanding and the social value of science
e) Promote the highest level of scientific integrity, public accountability and social responsibility in the conduct of science

Institutional climate:

a) More structured mentor-student/young PI relationship
b) Institutional effort in education rather than just technical skills
c) Promote the development of “soft” skills
d) Data recording and data protection
e) The role of graduate schools
f) Ethics committees for animal and human research
How much scientific publications conditions the way we do science?
The changing landscape of science publication
What is the future of scientific publications?
What is the future of scientific publications?

Online, in vivo in real time peer review

- Who will be allowed to comment and vote?
- Anonymous or disclosed?
- How much technical detail?
- How much access to biological material?
- How much openness?
Democratization of knowledge

- Funded publically only?
- What about competition and reward?
- How do you reward merit?
- How do we identify the future creative minds?
- Is it all collaborative work?
What is the future of science in an open world?

Democratization of knowledge !!!
Thank you!