Integrity and responsibility of researchers
Ethical views

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COMETS : *an independent structure which choses on what to give advices*

Missions

- Develop a reflexion on research practices
- Define principles about individual behaviour and collective attitudes
- Formulate recommendations on the researcher responsibilities and duties facing his institution and society
Why to worry about research integrity today

The facts

- The number of conflicts in strong increase in the academic world

- More and more cases of misconduct
  - appropriation of results found by others
  - alteration of data or creation of false results
  - plagiarism

- And also, more frequently
  - wrong attribution of authorship
  - lack of mentorship of students and postdocs
Why to worry about research integrity today
The reasons

More and more pressure on researchers

• Increasing internal and international competition
• *More and more time devoted to answer funding calls*
• Wrong evaluation criteria based on bibliometric indices
• *High impact factor reviews over-estimated*
• Insecure situation of young researchers
• *Running after the scoop in the media*
Seven reasons to care about research integrity (RI) 
(Science Europe, briefing paper)

• RI safeguards the foundations of Science and Scholarship
• *RI maintains public confidence in research evidence*
• RI underpins continued public Investment in research
• *RI protects the reputation and careers of researchers*
• RI prevents adverse impact on Patients and the Public
• *RI promotes economic advancement*
• RI prevents avoidable Waste of resources
Misconducts acknowledged by researchers in the US

<table>
<thead>
<tr>
<th>Misconduct</th>
<th>Chercheurs confirmés</th>
<th>Chercheurs débutants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inconduite à l'égard des collègues, étudiants ou sujets humains</td>
<td>13 %</td>
<td>9 %</td>
</tr>
<tr>
<td>Omettre de mentionner des données contredisant ses propres résultats, ou utiliser des données discutables en connaissance de cause</td>
<td>19 %</td>
<td>14 %</td>
</tr>
<tr>
<td>Changer son plan d'expérience ou les résultats d'une étude sous la pression d'un financeur</td>
<td>21 %</td>
<td>9 %</td>
</tr>
<tr>
<td>Publier les mêmes résultats dans plusieurs publications</td>
<td>6 %</td>
<td>3 %</td>
</tr>
<tr>
<td>Omettre ou ajouter indûment un auteur dans un article publié</td>
<td>12 %</td>
<td>7 %</td>
</tr>
<tr>
<td>Dissimuler les détails de méthodologie ou les résultats dans un article</td>
<td>12 %</td>
<td>9 %</td>
</tr>
<tr>
<td>Utiliser un plan d'expérience inadéquat</td>
<td>15 %</td>
<td>12 %</td>
</tr>
<tr>
<td>Exclure certaines observations que l'on juge « aberrantes » sans avoir fixé ce critère d'exclusion a priori</td>
<td>14 %</td>
<td>16 %</td>
</tr>
<tr>
<td>Ne pas tenir de cahier d'expérience ou ne pas l'archiver correctement</td>
<td>28 %</td>
<td>27 %</td>
</tr>
</tbody>
</table>

SOURCE: MARTINEZ ET AL (2005, NATURE)
Retraction of scientific articles (Retraction watch)
2\textsuperscript{nd} world conference on research integrity
Accepted by CNRS en juin 2012

Singapore Statement on Research Integrity

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

http://www.singaporestatement.org/
The COMETS guide book (*July 2014*)

« Promoting an honest and responsible research »

Provided to the
2000 lab directors (*all disciplines*)

Given and signed each year
to all the newly recruited members

Discussed in the laboratories

http://www.cnrs.fr/comets/
Promoting an honest and responsible research:

1. CONDUCTING A RESPONSIBLE RESEARCH
   Respect of ethical principles and regulations. Good practices

2. DATA PRODUCTION, PROCESSING AND ARCHIVING
   Collecting, processing and archiving personal data, big data, data archiving,

3. PUBLICATIONS
   Authorship, Open access publishing, large impact factor journals in evaluation.
   Copyright. Intellectual property, patents

4. RESPONSIBILITIES OF RESEARCHERS IN COLLECTIVE WORK

5. RESEARCH EVALUATION

6. SOCIAL RESPONSIBILITIES OF RESEARCHERS
   Communicating with the media and the public, expertise, conflict of interest

7. HOW TO COPE WITH INAPPROPRIATE BEHAVIORS
   Plagiarism, Falsification and fabrication of data, How to deal with frauds
About Authorship

« Introduction to the responsible conduct of research » Nicholas Steneck, drawing David ZInn
Benefits of collaborative research
Mentor-trainee relationship

There must be a better way...
National Charter of Ethics for the Research Professions

This Charter constitutes a French national version of the main international texts in this field: the European Charter for Researchers (2005); the Singapore Statement on Research Integrity (2010); the European Code of Conduct for Research Integrity (ESF-ALLEA, 2011). The Charter falls within the reference framework put forward in the European research and innovation program, HORIZON 2020.
When the media come into the game...

Le Monde, April 2015
Discussion forum on published articles

But also: frauds are revealed anonymously
Relations between science and citizens

The context keeps changing

*After the second world war:* the progress of science is considered the primary factor of economical and social development

*In the 70s:* the notion of progress is reconsidered in view of new challenges (*environment*, *energy*, *health* ...) and the awareness of the limited resources on earth

*Today:* in the public, admiration but apprehension /contestation

URGENT NEED to build a relation of TRUST between scientists and citizens
Participation of the citizens to science

The upsurge of participatory science in the 20th century

- Collection of scientific data by amateurs linked by internet network
- Amateurs can work with researchers in co-creation and co-design

Societal benefit:

- Useful for the advancement of science
- Training for amateurs to scientific methods and rational thinking
- Development of vocations for science among the young ones

Ethical concerns

- Validation of collected data
- Protection of private life
- Reward for contributors
Examples in the environmental sciences

Les observatoires de vigie-nature
Communiqué de presse – 19 mars 2015
Le projet collaboratif « 65 Millions d’Observateurs » porté par le Muséum national d’Histoire naturelle

Observatoire Spipoll © M.N.H.N – M. Evanno
Sortie scolaire, Biolit – Observatoire du littoral © Planète Mer
Renewing the dialogue between scientists and citizens

- **Dissemination of scientific culture**
  - Make a good use of media
  - Work with teachers

- **Controversies around the social impact of technological choices**
  - Increase democratisation of scientific strategies
  - Limitations by the freedom of the researchers

- **Active role of scientists**
  - Help to public controversial debates
  - Disconnect personal views and scientific knowledge
  - Necessary implication of research institutions
science sans conscience
n’est que ruine de l ’âme
Rabelais, Gargantua et Pantagruel,