RESEARCH INTEGRITY
WHO AM I?

Stefanie Van der Burght

- Research Department (2012 - …)
  - Policy Advisor
  - Research Integrity and Ethics Advisor
  - Trainer
  - Secretary of the Commission for Research Integrity
WHAT IS (RESEARCH) INTEGRITY?

Integrity

Professional integrity

Research integrity

Slide by Nele Bracke, Policy Advisor, Ghent University
Integrity

Doing the right thing
Doing things right
Also… under pressure
Also… when nobody is watching

Adapted from a slide by Nele Bracke, Policy Advisor, Ghent University
Professional integrity

Expressed in behavior… also in a professional setting

SECURITY OFFICER CODE OF CONDUCT

Exhibit honesty and integrity in the performance of my duties
- Maintain the confidentiality of my employer and locations I am assigned to
- Be honest, and forthright in all my interactions
- Be punctual and conduct my duties as instructed by my supervisor

Be observant in my duties and report promptly
- Be aware of my surroundings at all times
- Be observant for workplace hazards
- Report hazards promptly
- Take action to reduce hazards

Be professional and courteous
- Be courteous in all my interactions
- Be friendly and approachable
- Establish a rapport with others

SECURITY OFFICER CODE OF CONDUCT

Maintain a professional, clean appearance.
- Maintain clean, pressed uniforms.
- Ensure equipment is in good repair and functions properly.
- Maintain grooming standards as required by my employer.

Exhibit exemplary conduct on and off duty.
- Conduct myself to be an example to all.
- Maintain my integrity, honesty on and off duty.

Enforce the rules, regulations, laws and policies fairly.
- Enforcement must be consistent.
- Report violations of laws and policies promptly.

Represent my profession, company and employer proudly.
- Do not talk negatively about my company or employer.
- Be positive about my employer when interacting with the public.
- Serve as an example for other officers and employees.

Based on the Security Officer Code of Conduct of the Society of Security Officers.

Inspired by a slide by Nele Bracke, Policy Advisor, Ghent University.
THE EUROPEAN CODE OF CONDUCT FOR RESEARCH INTEGRITY
These principles are:

- **Reliability** in ensuring the quality of research, reflected in the design, the methodology, the analysis and the use of resources.
- **Honesty** in developing, undertaking, reviewing, reporting and communicating research in a transparent, fair, full and unbiased way.
- **Respect** for colleagues, research, participants, society, ecosystems, cultural heritage and the environment.
- **Accountability** for the research from idea to publication, for its management and organisation, for training, supervision and mentoring, and for its wider impacts.
“Behaviours that follow the standards established by professionals and society for the proper conduct of research”

Epigeum, Research Skills online, Research Integrity – Arts and Humanities
"Behaviours that significantly compromise the accuracy of the research record or the proper professional conduct of research."

Epigeum, Research Skills online, Research Integrity – Arts and Humanities

“Behaviours that do not live up to the standards for responsible conduct but that are not seen as serious misconduct.”

Epigeum, Research Skills online, Research Integrity – Arts and Humanities
RESEARCH BEHAVIOR

Good Research Practices

Questionable Research Practices

Fabrication Falsification Plagiarism

'Ideal' Sloppy Unconscious bias Conscious bias Falsification Fabrication
“THERE CAN BE NO FIRST-CLASS RESEARCH WITHOUT INTEGRITY.”

Marja Makarow, in *A new code of conduct for researchers* (European Science Foundation, 2010)
Fostering Responsible conduct of research FRCR
4x/py – 2/ps

FRCR – custom made workshop
SOME NUMBERS

• FFP

(Fromelli, PloS ONE, 2009, p.1)
“A pooled weighted average of 1.97% (N = 7, 95%CI: 0.86–4.45) of scientists admitted to have fabricated, falsified or modified data or results at least once—a serious form of misconduct by any standard […] .

In surveys asking about the behaviour of colleagues, admission rates were 14.12% (N = 12, 95% CI: 9.91–19.72) for falsification […] .”

(Translated from EOS, April 2013, p.25)
“From 315 researchers who completed an extensive survey, 4 admit to having fabricated data one or several times in the last three years (1.3%).”
• QRP

(Fanelli, PloS ONE, 2009, p.1)
“[…] and up to 33.7% admitted other questionable research practices.

[In surveys asking about the behaviour of colleagues, admission rates were] up to 72% for other questionable research practices.”

(Translated from EOS, April 2013, p.26-28)
“[…] 69% admit that he/she added at least one coauthor without that person having a real input in the past three years” (gift authorship)

[…] [27% of the respondents admit to have left out data or observations based on a gut feeling]”
Biomedische onderzoekers werken niet altijd even zuiver. De tolerantie voor inbreuken tegen de wetenschappelijke integriteit is ook vrij hoog.

Het steekt allemaal zo nauw niet in het lab
WHO ARE THEY, WHAT MOVES THEM? CAUSES

(Kornfeld, Academic Medicine, 2012)
Typology: 6 types
Misconduct = result of the interaction of psychological traits and the circumstances in which these individuals found themselves (~publication pressure)

(Tijdink et al., PlosOne, 2016)
Personality has an impact on research behavior (~Machiavellianism)
PERSONALITY

“the desperate”
whose fear of failure overcame a personal code of conduct

“the perfectionist”
for whom any failure was a catastrophe
“the ethically challenged “
who succumbed to temptation

“the grandiose”
who believed that his or her superior
judgment did not require verification
“the sociopath”
who was totally absent a conscience (and, fortunately, was rare)

“the non professional support staff”
who were unconstrained by the ethics of science, unaware of the scientific consequences of their actions, and/or tempted by financial rewards
ENVIRONMENT: PRESSURE

Source: cuppacafe.com
"I was close to a breakthrough when the grant money ran out."

Reprinted from Funny Times / PO Box 18530 / Cleveland Hts. OH 44118
phone: 216.371.8600 / email: ft@funnytimes.com
ENVIRONMENT: LOW DETECTION – MYTH OF SELF-CORRECTION

SCIENCE
Ruining Everything Since 1543
Most scientists regarded the new streamlined peer-review process as “quite an improvement.”
IS THERE A REPRODUCIBILITY CRISIS?

- 7% Don’t know
- 52% Yes, a significant crisis
- 38% Yes, a slight crisis
- 3% No, there is no crisis

1,576 researchers surveyed

DATA?

PUBLICATION OVER THERE

PUBLICATIONS AND DATA
A TABLE OF TRAGEDIES

The factors that lead to bad decisions can be represented by the mnemonic TRAGEDIES. Here are some examples of each pitfall. Recognizing these and responding appropriately can save a career and strengthen science.

Temptation

“Getting my name on this article would look really good on my CV.”

Rationalization

“It’s only a few data points, and those runs were flawed anyway.”

Ambition

“The better the story we can tell, the better a journal we can go for.”

Group and authority pressure

“The PI’s instructions don’t exactly match the protocol approved by the ethics review board, but she is the senior researcher.”

Entitlement

“I’ve worked so hard on this, and I know this works, and I need to get this publication.”

Deception

“I’m sure it would have turned out this way if I had done it.”

Incrementalism

“It’s only a single data point I’m excluding, and just this once.”

Gunsalus & Robinson, *Nine pitfalls of research misconduct*, Nature, 16/05/2018

Embarrassment

“I don’t want to look foolish for not knowing how to do this.”

Stupid systems

“It counts more if we divide this manuscript into three submissions instead of just one.”
LAST RESORT: THE COMMITTEE FOR RI (CWI)

cwi@ugent.be
09 264 95 59
BASIC PRINCIPLES OF CWI PROCEDURE

- Code of Ethics for Scientific Research in Belgium – ALLEA-code
- Easy accessible (CWI@ugent.be)
- Focus on integrity (no ethical commission, disciplinary body, …)
- Confidential procedure – guarantees identity
- Objective and neutral
- Substitution in case of conflict of interest – president + members – at demand
- Rights of defence (hearings, right to reply, file access, …)
- No disciplinary measures – advice university government
- Time frame
- FIRST AID
PREVENTION
LET’S PLAY A GAME!
DILEMMA GAME (ERASMUS U ROTTERDAM)
DILEMMA FUN

– Read the dilemma
– Think about the case & decisive parameters
– Choose an option – don’t show, don’t tell
– Discover the answers of your group members
– Group discussion
– Ask questions
ISSUE #1 – AUTHORSHIP
I am starting my PhD project and as a first task I am asked to rewrite a paper by a former PhD colleague who has meanwhile left academia. I notice the paper needs only small changes and the reviewers are very mild and friendly, so the paper may get accepted in the next round. My professor suggests putting me as last author, to support my academic career, despite my limited contribution to the actual research process. He will be the first author. The former PhD has agreed that others can use his work, but no specific agreements were made.
WHAT WOULD BE YOUR OPTION?

A. I agree to the offer and get listed as last author.
B. I suggest that I should be mentioned in a footnote, but not listed as author.
C. I contact the former PhD and ask him whether he wants the publication in his name.
D. I decline the revising job; I do not want to be involved.
WHAT DOES THE CODE SAY?

EU-code:
• All authors agree on the sequence of authorship, acknowledging that authorship itself is based on a significant contribution to the design of the research, relevant data collection, or the analysis or interpretation of the results.

• Authors acknowledge important work and intellectual contributions of others, including collaborators, assistants, and funders, who have influenced the reported research in appropriate form, and cite related work correctly.

• All authors are fully responsible for the content of a publication, unless otherwise specified.
PLOS Collaborates on Recommendations to Improve Transparency for Author Contributions

In a new report, a group convened by the US National Academy of Sciences and including a dozen journal editors reflects on authorship guidelines and recommends new ways to make author contributions more transparent.

What does it mean to be author number seven on a twenty-five–author article?
Authorship in scientific articles

Today, the traditional publication model of a single author prevails in only a few disciplines. In most other disciplines, multiple authors are almost always responsible for a publication, ranging from the limited partnership between doctoral students and their supervisor(s) to the publications by large(s) groups that collaborate in large international consortia.

Who can be put on the article as (co-)author?

Being an author in a legal sense (In terms of copyright)

The author(s) is/are the person(s) who has/have produced the publication.

A publication is co-authored when the co-authors together, in consultation with each other, have realized a publication which is concrete and sufficiently original (i.e. authentic and creative) to be protected by copyright. Not all authors are required to make the same (large) contribution. What is key is that the publication may have been possible without the contribution of a person designated as an author, but that it would have been different or may have been interpreted differently; in other words, what matters is that the contribution was substantial.

In this approach, there is still room for interpretation, as opinions may differ on what exactly is a substantial contribution. These concepts need to be interpreted in accordance with the ethical regulations concerning authorship in science.

Being an author in an ethical sense
Authorship: 10 best practices

If you are thinking about writing a new publication:

1. **Consult the guidelines on authorship** within your field and/or faculty and find out what policy is in place at the journal in question. Make sure that any arrangements are always in line with this policy.

2. **Discuss authorship issues beforehand** (i.e. before you start writing) with anyone you want to involve in your publication (e.g. your supervisor, colleagues, experts). Clearly state what role you would like them to take up and what they will get in return. As such, each person involved may point out what their expectations are.

3. Use an authorship protocol (e.g. protocol of the Faculty of Law and Criminology, of the Faculty of Arts and Philosophy) to formalize any arrangements made or at the very least record arrangements in an email. The **allocation and order** of authorship is known and approved by all partners.

4. **Appoint one corresponding author**. Naturally, this person meets all the criteria for authorship. At the very least, this person has a clear view of how the article was realized and what everyone’s contribution was. S/he is also ultimately responsible for all contributions being correctly listed. This person is responsible for the entire content of the article, owns the materials used or knows where to find them (e.g. version control, data) and acts as the official point of contact. When this person is appointed, it is crucial that s/he continues to meet these requirements in the long term; at the very least s/he is required to have fixed contact date, as well as a commitment to follow-up.

5. In the course of the publication, certain **changes** are likely to occur (e.g. determined contributions may be altered, an expert may be added). In that case, any **decisions** that were taken will be reviewed and, if necessary, **amended**. – See Item 3.

6. Journals increasingly require an authorship contribution statement, also known as contributorship disclosure, which explicitly and in detail describes what each author has done to realize the results, ranging from producing the research idea to writing and submitting a publication. Regardless of whether it was specifically requested by a journal, it is recommended that **for each manuscript a clear description is given of who was responsible for what part and what they did exactly**. These statements are preferably included in the actual article. Make sure that the contributions of all authors are explained in a clear, precise, detailed and accurate manner. Examples of authorship policies: Nature, PLoS, ...

7. For each author, add the **correct affiliation** and **ORCID**

8. Anyone who **does not meet the criteria for authorship but did somehow make a valuable contribution** to the manuscript (e.g. by offering an idea, technical support, material, financial support or statistical advice) may be **acknowledged** by being mentioned in the acknowledgements section. In a footnote on the first page of the manuscript, or at the end of the manuscript, or in a separate page.
ISSUE #2 – PLAGIARISM
A close friend asks me to comment on his paper. While reading the paper I detect a great number of similarities with some recently published papers. The similarities do not constitute plagiarism in a literal sense, but are noticeable. When confronting my friend with my findings he seems unimpressed and submits his paper to an international journal without any profound changes. A couple of weeks later I receive the request from the journal to act as a referee on this particular paper.
WHAT WOULD BE YOUR OPTION?

A. I decline the invitation.
B. I accept the invitation but in my review do not mention the similarities I noticed before.
C. I accept the invitation and report the similarities.
D. I ask my friend what he wants me to do.
WHAT DOES THE CODE SAY?

EU-code:

• Authors **acknowledge** important work and intellectual contributions of others, including collaborators, assistants, and funders, who have influenced the reported research in appropriate form, and **cite** related work correctly.

• Researchers **take seriously** their commitment to the research community by participating in **refereeing, reviewing and evaluation**.

• Researchers review and evaluate submissions for publication, funding, appointment, promotion or reward **in a transparent and justifiable manner**.

• Reviewers or editors with a **conflict of interest withdraw from involvement** in decisions on publication, funding, appointment, promotion or reward.

• **Ignoring** putative violations of research integrity by others or **covering up** inappropriate responses to misconduct or other violations by institutions is considered **misconduct**.

REFERRING TO OTHER SOURCES

QUOTATION
reproduces a statement word-for-word as it appears in its original source

PARAPHRASE
explains a statement by using your own words and sentence structure

SUMMARY
explains a statement using your words, but typically condenses a larger statement into a shorter explanation
Obviously, in a multi-national collaboration, the laws of two or more countries may govern the research. All parties need to agree in advance how compliance with national laws and rules will be assured.


When toxicologists work internationally, they should be cognizant of possible conflicts in national regulations. As Boesz and Fischer note, 'all parties need to agree in advance how compliance with national laws and rules will be assured' (2010, p.129).
Obviously, in a multi-national collaboration, the laws of two or more countries may govern the research. All parties need to agree in advance how compliance with national laws and rules will be assured.


Boesz and Fischer (2010) recommend that researchers who collaborate internationally decide at the outset how they will handle differences in national laws to which their work is subject.
Obviously, in a multi-national collaboration, the laws of two or more countries may govern the research. All parties need to agree in advance how compliance with national laws and rules will be assured.


Physicists who work outside their own countries need to agree in advance how compliance with national laws and rules will be assured (Boesz and Fischer, 2010).
RULES ON PLAGIARISM

- Content (words), structure (composition)
- Ideas (from colleague, journal, ...)
- Images (also internet)
- Articles (newspaper, magazine, ...)
- Internet sources
- Translations

NOT:
- Common knowledge (e.g. date WWII)
ISSUE #3 – DEALING WITH DATA
I have run an unsuccessful experiment. The results are very different from any of the earlier experiments. I am disappointed because I had carefully designed all the manipulations and stimuli, and the previous (same) experiments that I ran for the same project had worked out. I am now writing the paper.
WHAT WOULD BE YOUR OPTION?

A. I fully report the failed experiment as one of the main studies in the paper and speculate about the potential reasons behind the unsuccessful results in the discussion section.

B. I mention the unsuccessful experiment in one sentence and ask the interested readers to contact me for more details.

C. I do not mention the unsuccessful experiment anywhere.

D. I leave out the unsuccessful experiment from the paper, but mention it in the cover letter to the editor and suggest it can be included if so desired.
WHAT DOES THE CODE SAY?

**EU-code:**

• Authors and publishers consider **negative results to be as valid as positive findings** for publication and dissemination.
• Researchers design, carry out, analyse and document research in a careful and **well-considered manner**.
• Researchers publish results and interpretations of research in an open, honest, transparent and **accurate manner**, and respect confidentiality of data or findings when legitimately required to do so.
• Researchers report their results in a way that is **compatible with the standards of the discipline** and, where applicable, **can be verified and reproduced**.
• Withholding research results is considered **misconduct**.
• Researchers, research institutions and organisations ensure access to data is as open as possible, as closed as necessary, and where appropriate in line with the FAIR Principles (Findable, Accessible, Interoperable and Re-usable) for data management.
Safe long term data storage
Local storage = RISK

FAIR PRINCIPLES
data findable, accessible, interoperable and reusable
MAKE A DATA MANAGEMENT PLAN (DMP)

Templates and tool: DMPOnline.be

Welcome.
This instance of DMPonline is provided by the DMPonline.be Consortium to help you write data management plans.

The consortium was founded by:

Instituut voor Natuur- en Bosonderzoek
Université Libre de Bruxelles
Universiteit Antwerpen
Universiteit Gent
Universiteit Hasselt
Vrije Universiteit Brussel
Wetenschappelijk Instituut Volksgezondheid – Institut Scientifique de Santé Public
BCCM – Belgian Coordinated Collections of Micro-organisms
A consortium of Biological Resource Centres

HTTP://BCCM.BELSPO.BE
ISSUE #4 – COI
AN AUDIENCE

My PhD research is funded by a government organization. When discussing my conclusions with the organization, it becomes clear that my conclusions are much too nuanced to make any political statements. The organization asks me to rewrite my conclusions so that they offer more clear-cut statements. Based on the data I think it is impossible to say things with such certainty. When I discuss the matter with my supervisor he tells me that I need to write for my audience and that I should be able to make bolder statements. I might need the government organization for financing future research.
WHAT WOULD BE YOUR OPTION?

A. I rewrite my conclusions in the way the organization asks me to.

B. I refrain from rewriting my conclusions.

C. I decide to write an executive summary in which my conclusions are more certain and clear while keeping the nuanced conclusion in my dissertation.

D. I ask an older researcher who is very strict on scientific guidelines to decide on the matter.
WHAT DOES THE CODE SAY?

EU-code:
• All partners in research collaborations take responsibility for the integrity of the research.
• All partners in research collaborations agree at the outset on the goals of the research and on the process for communicating their research as transparently and openly as possible.
• All partners formally agree at the start of their collaboration on expectations and standards concerning research integrity, on the laws and regulations that will apply, on protection of the intellectual property of collaborators, and on procedures for handling conflicts and possible cases of misconduct.

• All authors disclose any conflicts of interest and financial or other types of support for the research or for the publication of its results.

• Researchers publish results and interpretations of research in an open, honest, transparent and accurate manner
• Researchers publish in a way that is compatible with the standards of the discipline and, where applicable, can be verified and reproduced
Unacceptable practices include

... allowing funders/sponsors to jeopardise independence in the research process or reporting of results

... misrepresenting research achievements

... exaggerating the importance and practical applicability of findings

MAKE IT CLEAR!

Disclosure slide in all presentations
Disclosure paragraph in all publications
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