RESEARCH AND PUBLICATION MISCONDUCT

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DISCLAIMER

The following information are the personal views of the presenter and do not represent the views or opinions of the Ministry of Health Malaysia nor the National Clinical Research Center.
DEFINITION

- Research Ethics is about norms, values, right and wrong, good and bad, and what ought and ought not to be done in the context of research.

DEFINITION

- Research Misconduct is about the bad, wrong and what ought not to be done in the context of research.
- Is not misconduct if due to honest error and carelessness.
PURPOSE

The purpose of this presentation is to inform participants of the types of research and publication misconduct, their consequences and implications, and how to avoid such misconduct so that participants shall be better and ethical researchers.

REFERENCES

- en.wikipedia.org/wiki/Scientific_misconduct
- http://research-ethics.net/topics/overview/
RESEARCH CYCLE

- Idea
- Plan
- Conduct
- Disseminate
- Report
- Analyze
- Follow-up

Misconduct can occur in each step of the cycle

TYPES OF MISCONDUCT

- Fabrication
- Falsification
- Plagiarism
- Violation of ethical standards regarding human and animal experiments
- Violation of local regulatory, national or institutional requirements
- Ghostwriting
- Unqualified authorship
- Suppression of data or findings
# Fabrication

- Making up fake facts to support purpose of research, arguments, conclusions, etc
- Making up fake references to support arguments, discussions, etc
- Making up results and research data

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**Photo manipulation** to distort their meaning

- Adding shapes or color to original image
- Splicing together different images to represent a single experiment
- Changing colour, brightness and contrast of only a part of the image
- Removing part of original image to give a different perspective
<table>
<thead>
<tr>
<th>FALSIFICATION</th>
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<tr>
<td>• Manipulation of research materials, equipment, or processes or changing or omitting data or results such that research is not accurately reported</td>
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<tr>
<td>• Wrongly modify or misquote statements from well respected references</td>
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<table>
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<th>PLAGIARISM</th>
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<tr>
<td>• The use of another person’s ideas, processes, results, or words without giving appropriate credit</td>
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<tr>
<td>– Using other’s ideas and results and reporting or publishing as if investigator has done all the work under which the data was obtained</td>
</tr>
<tr>
<td>– Reproducing Tables, Figures or Plates of others without giving credit, acknowledgement or permission</td>
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CITATION PLAGIARISM

- Failure to acknowledge or credit other earlier discoverers
- A minor form is copying whole sentences or paragraphs from references or literature although credit is given

SELF-PLAGIARISM

Salami publication
- Multiple publications of the same content with different titles and/or indifferent journals
- Includes publishing the same article in a different language without stating the initial source of publication
ETHICAL VIOLATIONS

• Failure to adhere to international standards and requirements for research involving human and animal subjects
• Failure to obtain ethical approval from the relevant authorities or committees

REGULATORY VIOLATIONS

• Failure to obtain approval or adhere to local regulatory, national and institutional requirements for research
• E.g. failure to get approval to conduct release of living modified organisms
• E.g. failure to obtain approval to import and test experimental drug
• E.g. failure to obtain institutional approval to conduct research
GHOSTWRITING

- Someone other than the named author(s) writes the manuscript for publication. Writer is not involved in the research and researcher(s) not involved in the writing.
- Often done to mask incompetence of author(s)
- May mask influence or contributions of sponsors such as drug companies
- Usually involves element of financial fraud

UNQUALIFIED AUTHORSHIP

- Conferring authorship to those who have not made substantial contribution to the research.
  - Senior researchers or heads of department who demands to be included
  - Junior researchers include senior researchers, without their knowledge, as authors to increase chances of acceptance for publication
  - Senior researchers agree to be included as authors so as to include chances of acceptance for publication
### SUPPRESSION OF DATA OR FINDINGS

- This is the failure to publish significant findings due to the results being adverse to the interests of the researcher, institution, or sponsor
- Includes selective dissemination of data or findings
- Suppression of data and findings itself may not be a misconduct unless there is a **deliberate intention to deceive**

### OFFICIAL CONSEQUENCE OF MISCONDUCT

- Letter of reprimand or termination of services
- More stringent approval process of research activities
- Independent certification of accuracy of reports or publications
- Totally or partially suspend a research grant; termination of research grant
### OFFICIAL CONSEQUENCE OF MISCONDUCT

- Bar or suspend from application of research grants for a specific period
- Require a correction to the research record
- Bar or suspend from participation in research activities as a investigator, reviewer, advisor or consultant, for a specific period of time
- Possible criminal sanctions

### PERSONAL CONSEQUENCE OF MISCONDUCT

- Loss of respect
- Loss of trust
- Retraction of publications
- Decreased acceptability of future reports or publications
- General suspicion of misconduct in future research activities
- Disassociation by other researchers
- Fined or jailed according to local laws
IMPLICATIONS OF MISCONDUCT

- Falsified and fabricated findings can mislead other researchers resulting in loss and wastage of resources, time and finances
- Unethical research that imposes unnecessary and possibly fatal risks for human and animal subjects
- Misrepresentation of findings or suppression of some findings can result in harmful or useless treatments, products, devices or procedures being used by unsuspecting humans

AVOIDANCE OF (ACCUSATION OF) MISCONDUCT

- Keep research records sufficient to reconstruct work done
  - Verify that work has been done
  - Avoids repeating what is already done
  - Verify who had contributed to the work
AVOIDANCE OF (ACCUSATION OF) MISCONDUCT

• Know or comply with relevant regulations
  – Know what are the institutional and national regulations on research and adhere to those regulations
  – The existence of regulations in specific areas is a sign of priority of those research areas and the regulations are to protect research subjects, researchers, and institutions

AVOIDANCE OF (ACCUSATION OF) MISCONDUCT

• Encourage open communications
  – Unless there are compelling reasons not to do so, sharing of ideas and findings, even before publication, can often benefit all parties
  – Agree on roles, responsibilities, authorship, intellectual property rights before commencement of research to avoid disputes later on.
AVOIDANCE OF MISCONDUCT

- Give credit where it is due
  - Give appropriate credit for contributions
  - Credit includes acknowledgement, authorship, awards, financial rewards, etc.
  - Credit given should be proportionate to contribution
  - Receiving credit also implies responsibility for the work or contribution
  - Punishment for misconduct shall be shared appropriate by those responsible

AVOIDANCE OF (ACCUSATION OF) MISCONDUCT

- Mentoring
  - Experienced researchers should guide those new to research
  - Experienced researchers should approach mentoring not as a burden but as an honour
  - Inexperienced researchers should seek guidance from those with experience; seeking guidance should not be seen as a sign of ignorance but rather as a positive move to increase knowledge

One can always seek new information alone but good mentors make the journey shorter and more rewarding
AVOIDANCE OF (ACCUSATION OF) MISCONDUCT

• If in doubt, **ASK**
• If you are guilty of misconduct, **STOP**, admit it, and take corrective actions
• If you witness misconduct, **ACT**

EXAMPLES OF RESEARCH MISCONDUCT

“You don’t want to do it like that”: some (in)famous examples of research misconduct

Dr Chris Willmott
Dept of Biochemistry, University of Leicester
cjrw2@le.ac.uk

http://vimeo.com/73040320
EXAMPLES OF RESEARCH MISCONDUCT

Piltdown Man (1912)
- Report of hominid remains found in Sussex
- “Missing link”? Later shown to be skull of modern man and jawbone of orang-utan
- Fraud certain, but identity of culprit still uncertain
  - Charles Dawson?
  - Martin Hinton?

Fabrication

EXAMPLES OF RESEARCH MISCONDUCT

- Researching ways to overcome tissue rejection at Sloan-Kettering Institute in New York
- Included transplanting fur from black mouse onto white mouse
- “Transplanted” patches actually drawn on with black marker pen (removable with alcohol)

Fabrication
EXAMPLES OF RESEARCH MISCONDUCT

Tuskegee Syphilis Study (1932-72)

- Poor African-Americans with advanced syphilis recruited to trial to study their “bad blood”
- Deliberately untreated to see long-term effects of infection, even when treatments became available (e.g. Penicillin)
- Over 400 men (plus families) involved

- Consent
- Exploitation
- Racism

- Breach of human rights

EXAMPLES OF RESEARCH MISCONDUCT

Vijay Soman & Philip Felig (1978)

- NEJM sent Felig paper for review
- Felig passed paper to junior colleague Soman
- They rejected paper

- Few months later, Am J Medicine sent original author paper by Soman to review
- Sections clearly copied from hers, plus additional material later shown to be made up

- Plagiarism
- Fabrication
- Violation of peer-review process
EXAMPLES OF RESEARCH MISCONDUCT


- Research into ageing, menopause, and Hormone Replacement Therapy, working primarily at Uni of Vermont
- Misconduct exposed by former lab technician Walter DeNino
- Pleaded guilty to falsifying 17 grant applications and fabricating data in 10 research papers
- 2006, first scientist jailed for fraud (also fined $200K)

- Fabrication
- Falsification

EXAMPLES OF RESEARCH MISCONDUCT

Malcolm Pearce (1994-95)

- Obstetrician at St George’s, London
- Reported transplant of ectopic pregnancy to uterus and live birth
- Colleagues at same hospital said no knowledge of case
- Pearce tried to hack computer to alter notes
- Also found to have invented patients in study on polycystic ovary syndrome
- Struck off by GMC

- Fabrication
### EXAMPLES OF RESEARCH MISCONDUCT

**Andrew Wakefield (1998)**
- Author on infamous Lancet paper linking autism with MMR vaccine
- Investigation for >2 years (ended May 2010) decided he was guilty of conflict of interest, both as recipient of money from lawyer looking for link to vaccine, and regarding company he set up looking to market test
- Highly selective reporting of data
- Unethical dealings with children
  - Consent
  - Exploitation
  - Conduct of clinical trial
  - Conflict of Interest (financial)

**Hwang Woo-Suk (2004-05)**
- 2 landmark papers in *Science* reporting production of human embryonic stem cells via Somatic Cell Nuclear Transfer
- Data fabricated and falsified
- Also obtained human eggs for research by unethical means, including requiring female team members to superovulate
- Suspended prison sentence for embezzlement
  - Fabrication
  - Falsification
  - Exploitation
  - Embezzlement
EXAMPLES OF RESEARCH MISCONDUCT

- Research into prevention of oral cancer at Norwegian Radium Hospital, Oslo
- 2005 paper in *Lancet* raised almost instant accusation of fabrication as it included 900 patients from database that didn’t exist at time cited
- Also found that second image in a 2001 NEJM paper just enlargement of first
- Eventually 15 papers (plus PhD) retracted
  - Fabrication
  - Falsification

EXAMPLES OF RESEARCH MISCONDUCT

Vipul Bhrigu (2010)
- U Michigan PhD student Heather Ames struggled to get expts to work in her own lab, but worked fine in boyfriend’s lab
- Suspected PostDoc Vipul Bhrigu (inset) was sabotaging expts
  - Set up concealed camera and caught Bhrigu adding ethanol to cell culture
- April 2011 pleaded guilty to destruction
  - Fabrication (sabotage)
Participants have been informed about the types of research misconduct, their consequences and avoidance.

*Give proper attention to these issues and you will be a better and ethical researcher*

Terima kasih
Thank you