Promoting Ethical Research and Publishing

Ritsumeikan Asia Pacific University

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Your goal is not only to publish but also to contribute to society

Be an ethical researcher and author

- What is research misconduct?
- Overview of research/publication ethics
- Advice for senior researchers/supervisors
What is research misconduct?
Research misconduct

The case of STAP


Nature 2014 Jul 3;511:112
Retraction of article and companion letter
- Incorrect figure labelling (wrong cell types)
- Same sample in images (not different ones)
- Digitally enhanced figure
- Discrepancy in genetic background of stem cells

Supplementary Data 2
Report by RIKEN investigative committee
- Falsification & Fabrication

...Resigned, PhD revoked, to return funds/fees

The case of STAP


Retraction in
Retraction: Stimulus-triggered fate conversion of somatic cells into pluripotency. [Nature. 2014]
In 22/40 countries surveyed, including Japan*...

National policies on ethics include in the definition of “research misconduct”:

• Fabrication
• Falsification
• Plagiarism

MEXT: “Specific research misconduct”

- **Fabrication**
  Making up data or research results, etc

- **Falsification**
  Manipulating research materials, equipment, or processes to change data or results obtained from research activities

- **Plagiarism**
  Appropriating the ideas, analysis, analytical methods, data, research results, research paper(s), or words of other researchers without obtaining the permission of the researchers or giving appropriate credit

...in any publications...willfully or owing to gross neglect
• **Research misconduct**
  - Violates true nature of research/publication
  - Undermines faith in science; hinders progress
  - Researchers “negate the significance of their own existence”
  - Affects researcher, scientific community, institutions, funding organizations

• **Responsible conduct of research**
  - “Voluntary self-discipline” by researchers
  - Checking/training...in lab, unit, department/faculty
  - Institutional culture, management, investigations, sanctions
  - Prevent misuse of funding
Section 2

Overview of research/publication ethics
Importance of research/publication ethics

Avoidable waste in the production and reporting of research evidence

Iain Chalmers, Paul Glasziou

Lancet 2009; 374: 86–89

~85% of biomedical research is waste

- Not addressing relevant questions
- Incomplete literature review to justify study
- Inappropriate methodology (low validity/reliability)
- Incomplete reporting to allow replication
- Clinical trials unpublished
Research & publication ethics

Importance of research/publication ethics

Reproducibility and reliability of biomedical research: improving research practice
UK Academy of Medical Sciences

- Value reproducible and robust research as much as novelty
- Encourage good research practice
- Share data (including –ve data), “open data”, collaborate
- Publish protocols
- San Francisco Declaration on Research Assessment (DORA), not to use journal-based metrics to measure scientists’ contributions

http://www.acmedsci.ac.uk/policy/policy-projects/reproducibility-and-reliability-of-biomedical-research/
Research & publication ethics

Importance of research/publication ethics

Responsible research publication: international standards for authors

Wager E & Kleinert S (2011)
2nd World Conference on Research Integrity, 21-24 July 2010

- Ethical, legal research
- Clear, honest reporting without fabrication, falsification, or inappropriate data manipulation
- Clear methods
- Original, not plagiarized, not published elsewhere
- Author responsibility; accurate contributions
- Disclose funding and conflicts of interest

Principles of research integrity

**Singapore Statement on Research Integrity**

2nd World Conference on Research Integrity, 21-24 July 2010

- **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

Research & publication ethics

Ethics from research to publication

No fabrication or falsification
- Never create or change data/images
- Never hide unexpected results
- Never crop or alter parts of images or make composites
- Keep raw files for inspection

No plagiarism
- Cite sources
- Quote or paraphrase
- No self-plagiarism / text recycling
- Use citations in notes; use plagiarism checkers
Allow others to verify & replicate your findings

Collaborators, Funder, Institution, Peer-reviewed journals, Other researchers

- Keep raw data files
- Make back-ups

Protect personal information

- Keep patient data anonymized
- Keep patient data secure (password protect files/disks; avoid USB sticks)
Ethics from research to publication

**Human studies**
- Pre-approval from ethics committee for ethical collection of data
- For studies with prospective assignment: register your trial before enrollment
- Informed consent for enrollment and for publication

**Declare personal or financial conflicts of interest, and funding source**
- Analyze your results in an objective and fair manner
- Being biased in your analysis deceives your readers and violates their trust
No redundancy
- No multiple submission or publication of the same paper
- Ask editors if you want to publish a translation or a different paper from the same data; cross-reference
- Check journal policy on allowed prepublication

Complete reporting
- No salami slicing of a study
- Publish negative or inconclusive data
- Describe all methods in full (supplementary files)
- Submit data files if journal asks; use data repositories
- Use international reporting guidelines (Equator network)
Four criteria for authorship in life sciences

1. Significantly involved in study design, data collection/analysis
2. Writing and revising the manuscript
3. Approval of final version
4. Responsible for the content (accuracy and integrity)

- Some journals ask for statements of author contributions
- Thank non-authors in the Acknowledgments

Research & publication ethics

Consequences of misconduct

Science is “self-correcting”...

- Helps society/humanity; based on trust
- Objective search for Truth
- Tests hypotheses; adjusts theories
- Relies on transparency & reproducibility
- Responsible use of resources
- Based on publishing in peer-reviewed journals: Correction notices made public and linked

Flawed/fraudulent articles are retracted, with permanently linked public Retraction notices

edanz
Consequences of misconduct

- Institutional investigations...
  - Retraction
  - Unable to publish or apply for funding
  - Return of funds (fines, criminal proceedings)
  - Suspension; loss of employment
  - Sanctions against department/university
  - Public listing
  - Investigation/retraction of other work
  - Other coauthors affected
MEXT consequences of misconduct

- **Individual level**
  - Return of competitive funds
  - Restrictions on new application (also administrative cost grants and other funding for basic operating expenses)
  - Punishment according to organization’s rules

- **Institutional level**
  - Reduced indirect cost grants
  - Administrative conditions; sanctions if conditions not met or if investigation delayed
Advice for senior researchers/supervisors
Maintain research integrity

**Self-correct & discourage misconduct**

**Individual level**
- Research with integrity & prevent misconduct during research
- Publish results for verification
- Comply with laws and regulations
- Be accountable if misconduct is suspected

**Institutional level**
- Establish lines of responsibility (rules/structure for responding to suspected misconduct and preventing it)
- Prevent misconduct: education officer, education, data preservation
- Respond to alleged misconduct (investigations, deadlines, appeals)

http://www.mext.go.jp/a_menu/jinzai/fusei/__icsFiles/afieldfile/2015/07/13/1359618_01.pdf
Advice for senior researchers

**Promote research integrity**

**Responsible research**

- Attend ethics courses; be familiar with ethics guidelines of your university
- Keep records of all methods and results
- Use citation management software
- Declare COIs to ethics boards, grant committees, journal editors; minimize COIs
- Avoid “fishing expeditions” and HARK (Hypothesizing After the Results are Known)
- Extra care for human/animal studies
- Preregister clinical trials
Advice for senior researchers

Educate young researchers

**Responsible research**

- Send them on research/publishing ethics and research/statistics techniques courses
- Hold regular ethics discussions and research presentation meetings
- Clarify roles of researchers in your group
- Periodically check record-keeping; check analyses and results; check reproducibility
- Assign mentors
- Emphasize quality over quantity
Expressing published ideas using different words

**Tips on paraphrasing:**

- Write the text first in Japanese, and then later translate back into English
- Verbally explain ideas to a colleague
- Name and cite published methods
- **Always** cite in your notes and in the report
- Use a plagiarism checker
Advice for senior researchers

**Introduction**

After doing a thorough literature review

**Methods**

Participants/materials, appropriate techniques, appropriate analyses, avoid “fishing expeditions”

**Results**

Include unexpected/negative/null results; data records & data accessibility!

**Discussion**

Include similarities **and** differences, limitations

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Educate young researchers

http://www.equator-network.org/
Advice for senior researchers

Ethics declarations

Original and unpublished

Not submitted to other journals

All authors agree and contributed

Declare in your cover letter...

State potential conflicts of interest

Funding, donations

Research ethics

Clinical journals: authorship, COI, IRB & consent, report form, ©
Your goal is not only to publish but also to contribute to society

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Any questions?

Thank you!

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edanzediting.co.jp/apu1511
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