Welcome to GEN-8001: Take control of your PhD journey

Helene N. Andreassen, PhD
Course responsible

University Library, 26 February 2020
About Take control of your PhD journey

• **Purpose:** Improve general competencies and skills related to use of sources and publication, relevant to all fields of study.

• **Format:** 5 (4 obligatory) seminars combining theory, plenary discussions, group activities, individual practice, and coffee breaks! (All slides will be made available on Canvas.)
  - Academic integrity and the transparency of science
  - Literature search
  - Open access to publications
  - Research data management
  - EndNote (optional)

• **Participants:** Cross-disciplinary, participants from a wide range of study fields: Learn from each other, identify common and disciplinary-specific challenges. Split into groups when considered more useful.
About Take control of your PhD journey

• **Exam:** Essay (1000-1500 words), two assignment texts to choose from. The purpose is to initiate/continue your decision-making process related to the use of sources, research data management or publication.
  • Available in WISEflow on February 27 at 12am.
  • Contact me if you have questions regarding the content.

• **Evaluation:** We’d love to hear your opinion! An evaluation form will be sent out after the seminars.
How the different stages in a PhD journey define and feed each other.
GEN-8001 Take control of your PhD journey:
A collaborative project

**University Library**
- Curriculum
- Teaching
- Exam
- Evaluation

**Faculty of Humanities, Social Science and Education**
- Administration
- Exam admin

**High North Academy**
(see next slide)
High North Academy: Transferable skills for PhD candidates

When should you participate?

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GEN-8001: Take control of your PhD journey

Academic integrity and the transparency of science

Helene N. Andreassen, PhD
Henning Hansen, PhD

University Library, 26 February 2020
Academic integrity &
the transparency of science

How to fulfill our goals and contribute as best we can to society?

- deal with the pressure and avoid shortcuts.
- share our findings, if we can.
Activity: What motivates you when carrying out research? What are the difficulties?

1. Spend 3 minutes writing down keywords or phrases.
2. Turn to your neighbour and let her/him know your thoughts.
3. Agree on 1 or 2 things, and make sure you get to discuss this with the group and/or the teachers during the 2 days to come.

Total duration of exercise: 10 minutes

For inspiration, check out the video from the University of Bristol (2012) after the seminar (see end of this PowerPoint) 😊
Learning objectives for this morning

1. Start a reflection process regarding academic integrity, transparency and open science, how the concepts are intertwined, and our role and responsibility in all this.

2. Be familiar with questionable research practices and why these should be avoided.

3. Improve our knowledge on plagiarism and how to avoid it.
The plan for this morning

1. Academic integrity, transparency and open science (Henning)

2. Research practices: Challenges, responsibilities, opinions, and consequences (Helene)

3. Sound management of scientific literature, including how to avoid plagiarism (Helene)

There will be a break, but feel free to drink coffee while working!
Academic integrity, transparency and open science
Fundamental principles of academic integrity

https://allea.org/code-of-conduct/
Make your work available to colleagues in a timely, open, transparent, and accurate manner.

RELIABILITY  |  HONESTY  |  RESPECT  |  ACCOUNTABILITY

Fundamental principles of academic integrity

European Code of Conduct for Research Integrity, 2017
Ensure that access to data is as open as possible, as closed as necessary.

**Fundamental principles of academic integrity**

*European Code of Conduct for Research Integrity, 2017*
Provide transparency about how to access or make use of your data.
Acknowledge important work and intellectual contributions of others.

**Fundamental principles of academic integrity**

European Code of Conduct for Research Integrity, 2017
Disclose any conflicts of interest.

Fundamental principles of academic integrity

European Code of Conduct for Research Integrity, 2017
Activity: How to deal with dilemmas we encounter

(see handout)

• Discuss the following three difficult situations in your group – what would you do?
• Are there any additional factors that might be relevant?
• Are there other solutions?

• Time for group discussion – 15 min.
• Short wrap-up in plenum
Systematic problems in institute’s data

A) Analyse the problems – PhD may be delayed.

B) Ask the institute to investigate all research based on the data set. The results might be problematic.

C) Change the scope of the research project to avoid using the data.

D) Do previous users of the database agree with the supervisor? Then follow common practice.

From Erasmus University Rotterdam (n.d.)
Add more references from editor and his journal? (No difference content-wise.)

A) Change my sources, but same data and conclusions.

B) Ask editor to accept paper without changes: current sources are the most appropriate.

C) Blackmail! Retract paper and send to another journal.

D) Add all the suggested articles – except the one by the editor.
“My” paper has already been published.

A) Feign ignorance. Hope reviewers don’t know the other article either.

B) Refer to the other article in overlapping points. My paper may be rejected because of a lack of substantive contribution.

C) Limited reference to the other article, so my article looks original.

D) Drop the paper and focus on another project.
Sound research?

How do we know?
Transparency in research

Being explicit about the evidence supporting one’s scientific claims

methodology, data collection, data analysis, outcome interpretation

Example of a transparent practice

• Study pre-registration
  • Register basic study design, or
  • Specify study procedures, outcomes & statistical analysis plan

Avoid publication bias.
Protect against P-hacking.
Correlation does not (always) imply causation

Worldwide non-commercial space launches correlates with Sociology doctorates awarded (US)

Tyler Vigen (CC BY 4.0)
Open science

Open Access  Open Data

Open source
Open notebooks
Open peer review
Open educational resources
Open Science: fulfilling your responsibilities to society

Share your research
Get out of the academic bubble
Plastic Pollution in the World's Oceans: More than 5 Trillion Plastic Pieces Weighing over 250,000 Tons Afloat at Sea

Marcus Eriksen, Laurent C. M. Lebreton, Henry S. Carson, Martin Thiel, Charles J. Moore, Jose C. Borrello, Francois Galgani, Peter G. Ryan, Julia Reisser
Plastic research

**Society:**
- Rethinking how we use plastic
- Cleanup start-ups

Credits: Erwin Zwart / The Ocean Cleanup
Corona research

«Quick release of data could stop an epidemic, disrupt how research is reported»

- Sabin Russell (Fred Hutchinson Cancer Research Center)

Lauren Gardner (Johns Hopkins): “Mapping 2019-nCoV”
Corona research

«The Coronavirus Race»
– journals vs. preprints?
Openness in research dissemination

Closed (no dissemination) → Open (max dissemination)
Transparency and openness in research dissemination

- **Closed** (no dissemination)
- **Open** (max dissemination)
- **Transparent**
- **Non-transparent**
After the break:

Research practices: Challenges, responsibilities, opinions, and consequences
Research practices: Challenges, responsibilities, opinions, and consequences
Fiction, not science: The Sudbø case

About
- Chief physician at Radiumhospitalet
- Associate Professor at the University of Oslo
- Eminent oncologist

The 2006 scandal
- Sudbø’s *Lancet* article from 2005 is based on fabricated data: 500 fictional patients
- Data fabrication and falsification from late 1990s

Consequences
- 13 articles retracted
- PhD degree (from 2001) revoked
- Doctor authorization revoked

See also
https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(05)67488-0/fulltext
“... there is a growing understanding that all science might be undermined if there is reason to doubt the fundamental integrity of the research in all stages.”

(Hjellbrekke et al., 2018, p. 4, our translation)

Measures taken e.g. via the creation of European frameworks:
- Responsible Research and Innovation
- Open Science

... and more locally, the Norwegian Research Ethics Act of 2017
(see slide with details in the end of this PowerPoint)
Ranking of practices, Norway 2018

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Ranking: From Worst (1) to Least worst (12)

Practices judged severe were less observed in others’ work and in self-reports.

Little variation between disciplines.

N = 7291

(Hjellbrekke et al., 2018)
# Ranking of practices, Norway 2018

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**Distortion of scientific knowledge**

- A waste of human and financial resources
- Possible risk to human health
## Ranking of practices, Norway 2018

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**Norm consensus**

Considered (very) problematic by the large majority
IS THERE A REPRODUCIBILITY CRISIS?

A Nature survey lifts the lid on how researchers view the ‘crisis’ rocking science and what they think will help.

BY MONTA BAKER

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

1,576 RESEARCHERS SURVEYED

WHAT FACTORS CONTRIBUTE TO IRREPROducible RESEARCH?

Many top-rated factors relate to intense competition and time pressure.

- Always/often contribute
- Sometimes contribute

- Selective reporting
- Pressure to publish
- Low statistical power or poor analysis
- Not replicated enough in original lab
- Insufficient oversight/mentoring
- Methods, code unavailable
- Poor experimental design
- Raw data not available from original lab
- Fraud
- Insufficient peer review
- Problems with reproduction efforts
- Technical expertise required for reproduction
- Variability of standard reagents
- Bad luck
Human errors, and why replicability is important

• 2014: A study reports that gay people in areas where people are highly prejudiced against them, have a shorter life expectancy (Hatzenbuehler et al., 2014)

• Much cited, and much attention in media.

• 2017: Replication fails when attempted by a peer (Regnerus, 2017).

• Hatzenbuehler asks one of his colleagues to replicate his original study. This also fails. A coding error in the data is revealed.

• After a reanalysis, the authors decide to retract the paper.
Human thoughtlessness(?) and why replicability is important

- The comparison of a new speech recognition algorithm with a benchmark algorithm hindered by missing publication of the original code.
- Recreation of the code based on description and replication failed to succeed.
- A survey of 400 research papers revealed that only 6% presented the code, 30% the test data.

- "AI researchers say the incentives are still not aligned with reproducibility. They don’t have time to test algorithms under every condition, or the space in articles to document every hyperparameter they tried. They feel pressure to publish quickly, given that many papers are posted online to arXiv every day without peer review. And many are reluctant to report failed replications."

(Hutson, 2018)
Shortcuts and sloppiness: A balancing problem?

Expectations to do good research. Expectations to get maximal credit and be visible in the right circles.

How to balance strategy and ideals?

Awareness of our two roles and the choices we have to make, as well as the consequences.

– the good scientist
Science: “The rigorous and systematic process of learning about the world with the highest reasonable standards of logic and evidence.”

– the good academic
Academics: “The process of successfully building one’s career in teaching and research at universities.”

(Carter, 2015, p. 4)
Shortcuts and sloppiness: Blame or act?

A narrative of individual impurity
The scientist is an actor behaving according to his own goals and values, instilled by the activity of science itself → Selfish motives

A narrative of institutional failure
The scientist is part of a greater self depending on funding and recognition, organized into a strict hierarchy → Pressure from above

A narrative of structural crisis
Science as an arena with the traditional values, discovery, recognition and cooperation, shifting → Publication, exploitation and competition

(Sovacool, 2008)
Activity: The current dynamics of Academia and how to navigate in it

Given the present state of Academia, as presented by Sovacool (2008), and the challenge of balancing roles, as introduced by Carter (2015) ...

In the groups, discuss the following points (10 minutes, followed by a short wrap-up in plenum):

1. Do you have any shared or different experiences when it comes to publication pressure?
2. Do you have any idea how the various questionable research practices are perceived in your field? Are they discussed? If not, how can you as PhD students contribute to calling attention to these (if you think it is a good idea)?
3. How can you balance the roles as good scientists and good academics? If you see any challenges, how can you proceed to overcome them?
4. Are you as PhD students in a position to contribute to a more healthy academic society? If yes, how? If no, why not?
Shortcuts and sloppiness: Blame or act?

A narrative of individual impurity
The scientist is an actor behaving according to his own goals and values, instilled by the activity of science itself → Selfish motives
➢ Self-regulation enhanced by training in ethics and codes of conduct

A narrative of institutional failure
The scientist is part of a greater self depending on funding and recognition, organized into a strict hierarchy → Pressure from above
➢ Protection of whistle-blowers and stronger fines and penalties

A narrative of structural crisis
Science as an arena with the traditional values, discovery, recognition and cooperation, shifting → Publication, exploitation and competition
➢ Make science more transparent, recognize the tensions within it, discuss its values and interests with the wider public

(Sovacool, 2008)
Sound management of scientific literature, including how to avoid plagiarism
## Ranking of practices, Norway 2018

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### Distortion of scientific knowledge
- A waste of human and financial resources
- Possible risk to human health

### Consequences for careers
- (and thereby the whole scientific enterprise)
Scientific writing

**Characteristics**
clarity – conciseness – accuracy – integrity (Roig, 2013)

**Ethical writing**
”... each of our written works represents an **implicit contract between us and our readers** in which the reader assumes that, unless otherwise noted, we are the sole authors of the work, the words and ideas are our own, and the ideas, concepts and theories described are accurately and objectively represented to the best of our ability.” (Roig, 2006, bolding ours)
Plagiarism

What are the essential elements?
The simple definition

"Plagiarism is defined as submitting someone else's work as your own."

(Carroll & Zetterling, 2009)
The complete definition

"Plagiarism occurs when someone

1. uses words, ideas, or work products
2. attributable to another identifiable person or source,
3. without attributing the work to the source from which it was obtained,
4. in a situation in which there is a legitimate expectation of original authorship,
5. in order to obtain some benefit, credit, or gain which need not be monetary."

(Fishman, 2009, p. 5)
The complete definition

"Plagiarism occurs when someone

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The actus reus: using someone else’s words or ideas without attributing them when they can and should be attributed.

2 differentiates between common knowledge and attributable information.

3 differentiates plagiarism and formatting errors.

(Fishman, 2009, p. 5)
The complete definition

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(Different) things that are usually taken to be plagiarism

1. Not citing one’s sources
2. Not marking copying as quotation
3. Too-close paraphrasing
4. Using a ghost writer

(Adapted from Howard, 2015)
UiT on cheating

Section 20. Cheating
Examples of actions which are counted as cheating or as an attempt to cheat are:

1. to use unauthorised supports during the exam
2. to present the work of other people as one’s own work
3. to cite sources or in other ways to use sources in one’s written work without referencing those sources properly
4. to submit an examination answer which has previously been submitted as an examination answer at the University of Tromsø or any other institution of higher education
5. to engage in unauthorized communication with other students during the examination
6. to act in conflict with the examination regulations or in any other unlawful way which may give one advantages at the exam

Cheating and attempts to cheat during coursework requirements which involve some elements of assessment (by university staff) are regulated by the same rules as cheating at the exam.

Also apply for the instruction component of PhD programmes
Disciplinary cases at UiT

2017: 30 of the 38 cases concerned plagiarism.
Activity:

Where do you draw the line for correct source use?

(see handout)

Spend a few minutes reading through the 6 scenarios. With your neighbor, spend 5 minutes discussing where we should draw the line.

Total: 10 minutes, followed by a short wrap-up in plenum.
Sound management of scientific literature

How to not plagiarise? A rule of thumb

Always make sure it is perfectly clear to your readers which sources you have used and how you have used them.

• Aim for summaries.
• Be careful with paraphrasing.
• Use quotations sparingly (when would this be the best choice?)
Sound management of scientific literature

How to not plagiarise? Think learning first

Read your source carefully with an explicit intent to understand the ideas and terminology, and learn its relevance to your own argument.

Practice remembering it, and explaining to yourself (or someone else) its role in your own argument. Let it "stew" a while.

Put the source out of reach, and write from memory without editing yourself much. Check later for accuracy and too-close paraphrasing.
How to decide which sources to use? Evaluate them carefully!

→ A few general criteria to get you started: Relevance, objectivity, reproducibility.
→ Avoid cherry picking.
→ Keep this in mind during the literature search session after lunch!
"Self plagiarism occurs when authors reuse their own previously written work or data in a 'new' written product without letting the reader know that this material has appeared elsewhere."

(Roig, 2013, p. 16)

In case of reuse of results and/or text, you should make it perfectly clear that it has already been appeared somewhere (this also applies to exam papers and unpublished conference papers!)
### Ranking of practices, Norway 2018

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### Questionable research practices

Categorized as less severe, but still considered problematic.

(see Hjellbrekke et al. 2019, for more details about the data)

To be added (e.g.): **Duplicate publishing, redundant publishing**, text recycling (Roig, 2013), excluding data points, selective reporting of studies, collecting more data on the basis of significance (John et al., 2012).
Sound management of scientific literature

Questionable research practices & some consequences of self-plagiarism

- Misrepresentation of novelty and originality (breach of trust)
- Copyright infringement and violation of editorial agreements
- Waste of editorial and reviewing effort
- Scarcity of publication space
- Informational noise
Salami slicing: A QRP or a sound publication strategy?

Segmentation of a large study into two or more publications, when the results are best presented as a cohesive single whole.

“Several months ago, for example, we received a manuscript describing a controlled intervention in a birthing center. The authors sent the results on the mothers to us, and the results on the infants to another journal. The two outcomes would have more appropriately been reported together.

We also received a manuscript on a molecular marker as a prognostic tool for a type of cancer; another journal was sent the results of a second marker from the same pathological specimens. Combining the two sets of data clearly would have added meaning to the findings.” (Kassirer & Angell, 1995, p. 450; cited in Roig, 2013, p. 19, bolding ours).
Salami slicing: A QRP or a sound publication strategy?

“In real life, the limits between the appropriate division of a manuscript into smaller pieces worthy of publication as separate papers and dual publication are hazy: no situations are all black or all white […]. Instead, a continuum exists between the appropriate division of the data and dual publication, with salami slicing located somewhere in the middle.” (Karlsson & Beaufils, 2013, p. 751-752)

When is it appropriate to split our research into smaller publications?

What to do in the case of doubt?

How should we ensure that the reader understands the publications are related?
Highly cited researcher banned from journal board for citation abuse

Investigation finds that biophysicist Kuo-Chen Chou repeatedly suggested dozens of citations be added to papers.

Richard Van Noorden

A US-based biophysicist who is one of the world's most highly cited researchers has been removed from the editorial board of one journal and barred as a reviewer for another, after repeatedly manipulating the peer-review process to amass citations to his own work.
Sound management of scientific literature

Avoid QRP: Cite the relevant papers, that you have read and used

Do not stuff your reference list with irrelevant sources
→ Every cited source should have a function in your text.

Do not copy other people’s reference lists
→ Might not fit in the context, might give rise to misunderstandings, redistribution of bad science, and academic urban legends (Rekdal, 2014; Engber, 2017)
• Original research: Examination of drug addiction in a controlled setting.
• Summarized as a 101-word letter in a scientific journal.
• Cited hundreds of times in the 1990s and the 2000s.
  • 72.2% used the letter as evidence that addiction was rare in patients treated with opioids.
  • 80.8% did not note that the patients had been hospitalized during treatment.

“We believe that this citation pattern contributed to the North American opioid crisis by helping to shape a narrative that allayed prescribers’ concerns about the risk of addiction associated with long-term opioid therapy.” (Leung et al., 2017)
Sound management of scientific literature

Avoid QRP: Cite the relevant papers, that you have read and used

Do not stuff your reference list with irrelevant sources
→ Every cited source should have a function in your text.

Do not copy other people’s reference lists
→ Might not fit in the context, might give rise to misunderstandings, redistribution of bad science, and academic urban legends (Rekdal, 2014; Engber, 2017)
→ Any circumstances where it is ok to not read all cited sources?
Sound management of scientific literature

If in doubt, seek advice
Your supervisor
The excellent guide by Roig (2013)
Trusted fellow students
Before the break
To get info about future sessions

Follow TODOS and/or the University Library on Facebook

or

Contact Åsne Høgetveit asne.o.hogetveit@uit.no

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**Events**

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**Shut Up & Write - morning**

Hosted by TODOS - PhD students at UIT - The Arctic University of Norway and Universitetsbiblioteket UIT

**MAR 5**

Public

Thursday, 5 March 2020 from 09:00-12:00

Next Week

sent upon confirmation
Where to go for the seminar on literature search?

Humanities, Social Sciences & Law: SVHUMC0109

Medicine & Health: TEO-H3 3.416

Technology & Natural Sciences: TEO-H1 1.433
GEN-8001: Take control of your PhD journey

Academic integrity and the transparency of science

helene.n.andreassen@uit.no
poul.h.hansen@uit.no

University Library, 26 February 2020
A video for inspiration

(University of Bristol, 2012)
The Norwegian Research Ethics Act (2017)

Ensure that public and private research is conducted in accordance with recognised norms of research ethics.

- The research should follow norms that govern the relations internally within the research community, and externally between researchers and those involved in research, and society as such.
- The research must be responsible and sound and follow so-called recognized norms of research ethics.
- Breaches of research ethical norms can be regarded as misconduct.
- No action will be regarded as misconduct unless it was committed intentionally or with gross negligence.
- The researcher has the main responsibility to assure that the research is conducted with due care.
- Research institutions are responsible for teaching and training in research ethics.

(Taken from Norwegian National Research Ethics Committees, 2018, see also LOV-2017-04-28-23 on lovdata.no)
High North Academy: Transferable skills for PhD candidates

Useful courses during your PhD

**GEN-8001 Take control of your PhD journey**
About academic integrity, literature search, open access publishing, research data management, reference tools.

**FSK-8002 Scientific writing**
About the scientific publication and the review process, scientific English and presentation techniques, incl. work on own manuscripts.

**GEN-8007 Coping with media**
About communicating your message to media both in written and oral form, and experience how it is like to be interviewed on video.

**GEN-8010 Visualizing your science**
About communicating your science in three dimensions. Use your own data/results and learn how to make a museum exhibition.

Skills needed after your PhD

**FSK-8003 Leadership skills**
About how experienced leaders think, how you can prepare for leadership tasks and how to develop your leadership potential.

**FSK-8005 Funding your research**
About what is needed for writing a successful research application

**BED-8004 Academic entrepreneurship**
About how you can use your skills and findings from academia to start your own business.
High North Academy:
Transferable skills for PhD candidates

Contact information

hna@uit.no
www.highnorthacademy.com
facebook.com/highnorthacademy
High North Academy: Transferable skills for PhD candidates

How to sign up for courses

• Courses are advertised by email and Tavla

• Updated information is always available on www.highnorthacademy.com, follow the links to the course catalogue if you want to register

• Registration deadlines for Spring courses is 1st Feb, the deadline for Autumn courses is 1st Sept.

• Courses may be full, make sure you register early!


References


References


All pictures are taken from Colourbox.com if not stated otherwise.