

# RESEARCH ETHICS

Kristina Rolin, University Lecturer in Research Ethics

[kristina.rolin@tuni.fi](mailto:kristina.rolin@tuni.fi)

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## Outline

- What is good scientific practice?
  - *Responsible conduct of research and procedures for handling allegations of misconduct in Finland* (Finnish Advisory Board on Research Integrity, 2012):  
[https://www.tenk.fi/sites/tenk.fi/files/HTK\\_ohje\\_2012.pdf](https://www.tenk.fi/sites/tenk.fi/files/HTK_ohje_2012.pdf)
  - Scientific practice versus institution
  - "Goodness" in good scientific practice: Epistemic, moral, and social
- Scientific misconduct
- Research with human participants
  - *Ethical principles of research with human participants and ethical review in the human sciences in Finland* (Finnish National Board on Research Integrity, 2019):  
[https://www.tenk.fi/sites/tenk.fi/files/lhmistieteiden\\_eettisen\\_ennakkoarviointin\\_ohje\\_2019.pdf](https://www.tenk.fi/sites/tenk.fi/files/lhmistieteiden_eettisen_ennakkoarviointin_ohje_2019.pdf)

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# WHAT IS GOOD SCIENTIFIC PRACTICE?

Responsible conduct of research

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## Responsible conduct of research I

- The researcher should follow the principles that are endorsed by the research community (e.g., integrity, meticulousness, and accuracy in conducting research).
- The methods applied for data acquisition (as well as for research and evaluation) should conform to scientific criteria and be ethically sustainable.
- When publishing the research results, the results should be communicated in an open and responsible fashion.
- The researcher should take due account of the work and achievements of other researchers by respecting their work, citing their publications appropriately, and by giving their achievements the credit and weight they deserve.
- The researcher should comply with the standards set for scientific knowledge in planning and conducting the research, in reporting the research results, and in recording the data obtained during the research.

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## Responsible conduct of research II

- The necessary research permits have been acquired and the preliminary ethical review that is required for certain fields of research has been conducted.
- Sources of financing, conflicts of interest or other commitments relevant to the conduct of research are announced to all members of the research project and reported when publishing the research results.
- Researchers should refrain from all research-related evaluation and decision-making situations, when there is reason to suspect a conflict of interest.
- Before beginning the research or recruiting the researchers, all parties within the research project or team (the employer, the principal investigator, and the team members) should agree on the researchers' rights, responsibilities, and obligations, principles concerning authorship, and questions concerning archiving and accessing the data.
- The research organization should adhere to good personnel and financial administration practices (incl. the data protection legislation).
- [https://www.tenk.fi/sites/tenk.fi/files/HTK\\_ohje\\_2012.pdf](https://www.tenk.fi/sites/tenk.fi/files/HTK_ohje_2012.pdf)

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## Why is research ethics important?

Compliance with the norms of research ethics promote

- **the epistemic goals of science**, such as truth and the avoidance of error (e.g., prohibition of fabricating, falsifying, or misrepresenting data);
- **collaboration and cooperation** that is necessary for research groups, scientific communities, and institutions (e.g., mutual respect and trust among researchers, fairness in the distribution of credit and responsibility);
- **relations of trust** between researchers and the larger public, and the accountability of researchers to the society (e.g., competence, honesty, epistemic responsibility);
- **important moral and social values** (e.g., human well-being, animal welfare, public health and safety).

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## Who should be concerned with RE?

- “Each individual researcher and research group member is primarily responsible for complying with the principles of the responsible conduct of research.” (TENK 2012, 31)
- “Nonetheless, the responsibility also rests on the whole research community: research groups and their principal investigators, the directors of research units, and the administration of research organizations.” (TENK 2012, 31)
- Research permission from an organization, free informed consent from individual human participants, ethical review from an ethics committee: The moral responsibility of the researcher cannot be “outsourced” to other agents.

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## Why is research ethics important to me?

- We study research ethics to protect ourselves, our interests and reputations.
- It is easier to avoid RE blunders, when we have the tools to identify RE issues and we can justify our choices to ourselves and others.
- Violations of RE norms often lead to workplace conflicts which will undermine our well-being in work.
- Violations of RE norms often amount to waste of money and time we have invested in research.

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## Summary

- Research ethics is an integral part of good scientific practice. Lack of time or publication pressure is not an excuse to overlook RE norms and principles.
- Research ethics is relevant to
  - all academic disciplines (even though some RE issues are discipline specific),
  - all stages of the research process as well as science communication (including social media), and
  - a variety of roles we have in academic work: researcher, teacher, advisor, team leader, reviewer for conferences and journals, expert in policy, etc.
- Violations of RE norms can threaten the epistemic reliability of scientific knowledge, undermine public trust in science, and damage scientists' career prospects.

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# WHAT IS GOOD SCIENTIFIC PRACTICE?

Scientific practice versus institutions

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## Practice

"By a 'practice' I am going to mean any coherent and complex form of socially established cooperative human activity through which goods internal to that form of activity are realized in the course of trying to achieve those standards of excellence which are appropriate to, and partially definitive of, that form of activity, with the result that human powers to achieve excellence, and human conceptions of the ends and goods involved, are systematically extended." (MacIntyre, Alasdair. 1981. *After virtue*, 187)

- What are goods internal/external to scientific practice?
- Standards of excellence?
- Is science one practice or many?

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## Internal versus external goods

- Goods internal to scientific practices can be pursued only by participating in these practices:
  - Significant true justified belief
  - Understanding/explanation
  - Prediction/forecasting
  - Instrumental/technological success
  - "Bildung" (personal development)
- Perspective: Scientists as truth-seekers
- Goods external to scientific practices can be pursued in many ways:
  - Money
  - Social status
  - Power
  - Prestige
- Scientific institutions manage goods external to scientific practices.
- Perspective: Scientists as credit-seekers

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## Practices versus institutions

- By pursuing goods internal to scientific practices, scientists and scholars will receive recognition from their peers.
- RE in practices: RE norms are implicit in the standards of excellence “which are appropriate to, and partially definitive of, that form of activity.”
- Recognition from peers will help scientists and scholars achieve external goods necessary for their research (research funding, jobs, promotions, etc.).
- RE in institutions: Institutions provide incentives for good scientific practices and sanctions for violations of RE norms. Institutions are responsible for RE education and advising.

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## Practice versus institution: tension

- There is a tension between the two perspectives: a perspective from the practices of science (scientists as truth-seekers) and a perspective from the institutions of science (scientists as credit-seekers).
- The role of institutions is to support practices, but they can also corrupt them so that external goods are pursued at the expense of internal goods (and not via pursuing internal goods).
- Predicament: We work in an organizational setting that gives rise to the tension between practices and institutions (truth-seeking and credit-seeking).
- The tension between scientific practices and institutions is internal to science, and hence, it is not the same as the conflict of interest (COI).
  - COI is a tension between scientific practices/institutions and other practices/institutions (e.g., business, politics).

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## Conflict of interest

- **Conflict of interest (COI)** is a situation in which a person has a financial, personal, political or other interest which is likely to bias his or her judgment or decision-making concerning the performance of his or her ethical or legal obligations or duties (Resnik 2015).
  - Financial interest: money or some other goods from a private interest group
  - Personal interest: family relations, friendship, academic competition
  - Political interest: not only political partisanship but also social/political ideologies
- Declaring a COI is not an admission of wrongdoing; hiding a COI is a form of wrongdoing.

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## Summary

- We can adopt two different perspectives on academic work: truth-seeking versus credit-seeking; internal versus external goods; practices versus institutions.
- Tension internal to science: external goods should not be pursued at the expense of internal goods.
- Research ethics is an integral part of good scientific practices (internal goods, standards of excellence) and well-functioning institutions.
- The role of scientific institutions is to support good scientific practices (education, advising, incentives, sanctions) – the reward structure of science.

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# "GOODNESS" IN GOOD SCIENTIFIC PRACTICE

Epistemic, moral, and social

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## Good scientific practices

- Epistemic goodness is *constitutive of* scientific practices.
  - Significant true justified beliefs
  - Empirical success in explanation or prediction
  - The avoidance of error
- Moral and social goodness *constrains and guides* scientific practices.
  - The well-being of other human beings, the welfare of animals, concern for environment
  - A good society: e.g., social justice, equality, human rights, democracy, sustainable development

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## Moral goodness

- Consequentialism in ethics: The moral acceptability of our actions and practices depends on their consequences to all people who are affected by our actions and practices.
- Deontological ethics: Whether our actions are morally required, forbidden or permitted depends on their conformity with moral duties (e.g., an obligation to do something or a permission to do something).
- Virtue ethics: We should aim to be virtuous persons in our actions and practices as well as in our reactions to others' actions and practices. The challenge is to develop virtuous dispositions and the practical wisdom we need to live accordingly.

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## Consequentialism in ethics

- The challenge is to identify those persons who might be impacted by our actions and practices, and to anticipate the consequences (e.g., human subjects in research, collaborators, end users of knowledge).
  - Anticipated consequences: short-term and long-term
- Actual consequences may be intended or unintended, expected or unexpected.
- Consequentialism can justify such norms as:
  - Do not harm others
  - Minimize risks
  - Maximize benefits
- The challenge is to strike a balance between risks and benefits.

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## Deontological ethics

- The challenge is to identify relevant moral duties (obligations, prohibitions, and permissions), and to judge what it takes to follow them in any given situation.
- Example: One ought to act only on that maxim that can be willed to become a universal law, e.g., honesty (Kant).
- Example: Treat others never simply as means but always at the same time as ends (Kant).
  - The universal value of human beings generates universal obligations.

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## Virtue ethics in science

1. Honesty
2. Competence
3. Conscientiousness
4. Capability of epistemic self-assessment

Intellectual virtues are both epistemic and moral virtues as they contribute to the trustworthiness of the person as a source of information.

Hardwig, John. 1991. The role of trust in knowledge. *Journal of Philosophy* 88 (12), 693-708.

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## Fair distribution of credit

- **Fairness:** Credit should be given where credit is due but not where it is not due (Resnik 1996, 575).
- Fair distribution of credit can be undermined by
  - unfair denial of authorship (or the first/last authorship) in scientific collaborations
  - guest authorship (honorary authorship)
  - ghost writing
  - plagiarism and misappropriation
- Other concerns: dishonesty, obscuring epistemic and moral responsibility, possibly hidden conflicts of interest

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Lecture 1.2

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## Moral versus other motives

RE norms are followed because of a variety of motivations:

- **Self-interests:** in many cases, epistemically responsible and morally acceptable behavior is in the self-interest of scientists.
- **Epistemic interests:** epistemically responsible and morally acceptable behavior serves epistemic goals, both personal and impersonal.
- **Moral obligations:** epistemically responsible and morally acceptable behavior is motivated by genuinely moral motivations, such as the concern for the well-being of other human beings, the welfare of animals, and the environment.

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## Summary

- In good scientific practices, goodness has an epistemic, moral, and social dimension.
- Epistemic goodness is *constitutive of* scientific practices (significant true justified beliefs, empirical success in explanation or prediction, the avoidance of error).
- Moral and social goodness *constrains and guides* scientific practices.
  - The well-being of other human beings, the welfare of animals, concern for environment
  - A good society: social justice, equality, human rights, democracy, sustainable development

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# SCIENTIFIC MISCONDUCT

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## RCR guidelines

- Violations of responsible conduct of research (RCR) are classified into two categories:
  - Scientific misconduct
  - Disregard for the responsible conduct of research
- Allegations of misconduct are dealt with through the standard procedure of handling alleged violations of the responsible conduct of research (the RCR process).
- The Rectors/Presidents of Tampere University and Tampere University of Applied Sciences are in charge of the processes of handling alleged violations, respectively.
- The process is essentially the same in all universities in Finland (following the guidelines of Finnish Advisory Board on Research Integrity).
- In Finnish: "Hyvä tieteellinen käytäntö," "HTK-prosessi"

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## Scientific misconduct

### **Fabrication, falsification and misrepresentation of data**

- Epistemic justification:
  - The prohibition of fabricating, falsifying, or misrepresenting evidence promotes truth and minimizes error.
- Moral justification:
  - Fabrication, falsification, and misrepresentation of data are forms of dishonesty.

### **Plagiarism and misappropriation**

- Epistemic justification:
  - Plagiarism and misappropriation create confusion about who has epistemic (and moral) responsibility for knowledge claims.
- Moral justification:
  - They undermine the reward structure of science (based on authorship and citations). They result in unfairness in the distribution of credit in science.

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## Misconduct versus honest error

- Scientists are not expected to be infallible.
- *Fallibilism* is the philosophical view that very few theories or hypotheses in science can be justified in a conclusive way. Best available scientific theories involve uncertainties, and they may turn out to be partly or fully false (or their scope of application will be limited).
- *Abstraction/idealization in modelling*: Best available scientific models may include assumptions that scientists know to be false.
- “It is important to remember, ..., that misconduct occurs only when researchers **intend to deceive**: honest errors related to sloppiness, poor record keeping, miscalculations, bias, self-deception, and even negligence do not constitute misconduct. Also, **reasonable disagreements** about research methods, procedures, and interpretations do not constitute research misconduct” (Resnik 2015).

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## Misconduct versus disagreement/dissent

- By *scientific dissent* is meant a disagreement that challenges a consensus view, that is, a view that has been accepted by the majority of scientists in the relevant scientific community.
- Scientific dissent is often thought to be epistemically beneficial for scientific communities:
  - Consensus is no guarantee of truth, and hence, dissent can improve scientific knowledge by helping scientists identify and correct false beliefs.
  - And even when dissent does not give scientists a reason to change their views, it can be epistemically valuable by forcing them to provide better arguments for their views or to communicate their views more clearly and efficiently (see the ethics of criticism).

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## Fabrication and falsification

- **Fabrication** refers to reporting invented observations to the research community.
  - The fabricated observations have not been made by using the methods as claimed in the research report.
  - Fabrication also means presenting invented results in a research report.
- **Falsification** (misrepresentation) refers to modifying and presenting original observations deliberately so that the results based on those observations are distorted.
  - The falsification of results refers to the unfounded modification or selection of research results.
  - Falsification also refers to the omission of results or information that are essential for the conclusions.

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## Plagiarism and misappropriation

- **Plagiarism**, or unacknowledged borrowing, refers to representing another person's material as one's own without appropriate references (direct or adapted copying). This includes research plans, manuscripts, articles, other texts or parts of them, visual materials, or translations.
  - **Misappropriation** refers to the unlawful presentation of another person's result, idea, plan, observation or data as one's own research.
- Notice that "self-plagiarism" is seen as a questionable research practice even though it does not involve intellectual theft.
  - It is problematic insofar as it involves dishonesty (presenting old work as new).
  - Researchers should cite their own published works in the same way as other researchers' work.

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## Disregard for the responsible conduct of research

Disregard for the responsible conduct of research manifests itself as **gross negligence** and **carelessness** during the research process:

- denigrating the role of other researchers in publications, such as neglecting to mention them, and referring to earlier research results inadequately or inappropriately;
- reporting research results and methods in a careless manner, resulting in misleading claims;
- inadequate record-keeping and storage of results and research data;
- publishing the same research results multiple times as new and novel results (redundant publication, self-plagiarism).

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## The RCR process

- A standardized process for handling alleged violations of the responsible conduct of research in Finland.
- The process is carried out by university rectors/presidents, and if necessary, also by TENK.
- Three steps: written notification (in accordance with a model letter), preliminary inquiry, investigation proper (if needed)
- Procedure: fairness and impartiality; hearing of all the involved parties
- Universities have Research Integrity Advisors with whom researchers can have confidential discussions (advisors do not participate in the investigation of alleged violations).

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# RESEARCH WITH HUMAN PARTICIPANTS

*Ethical principles*

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## General ethical principles

- The researcher respects the dignity and autonomy of human research participants.
- The researcher respects material and immaterial cultural heritage and biodiversity.
- The researcher conducts their research so that the research does not cause significant risks, damage or harm to research participants, communities or other subjects of research.

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## Free informed consent

- Moral principle: the dignity and autonomy of human research participants
- People participating in research have the right (a) to participate voluntarily but also to refuse to participate; (b) to discontinue their participation at any time without suffering any negative consequences; (c) to withdraw their consent to participation in the research at any time; (d) to receive information on the content of the research, the processing of personal data, and how the research will be conducted in practice; (e) to receive an understandable and truthful view of the aims of the research and any potential harm and risks; and (f) to be aware that they are participating in research (see also TENK 2019, 51-52).
- The research participants do not have to give any reason for discontinuing their participation or withdrawing their consent.
- The researcher has an obligation to document the participant's consent to participate in the research, preferably in writing.

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## Free informed consent: special cases

- There are special ethical principles for research involving *minors*:
  - Minors must be informed about the research in a way that they are able to understand.
  - If the minor is 15 or older, their own consent is sufficient for participation in the research. However, it is recommended that the parent (or custodian) is informed of the research also in these situations.
  - The participation of minors under the age of 15 is primarily decided by the parent (or custodian).
- There are also special ethical principles for research involving *people with limited capacity*. For more information, see pp. 53-54  
[https://www.tenk.fi/sites/tenk.fi/files/Ihmistieteiden\\_eettisen\\_ennakkoarvioinnin\\_ohje\\_2019.pdf](https://www.tenk.fi/sites/tenk.fi/files/Ihmistieteiden_eettisen_ennakkoarvioinnin_ohje_2019.pdf)

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## Privacy and confidentiality

- All human beings have a right to privacy. In many countries, privacy is a right that is guaranteed by law.
- Confidentiality is the corresponding duty. Everyone collecting or dealing with private information has a duty to maintain confidentiality, in other words, make sure private information is kept private.
- The researcher has an obligation to protect the privacy of people who have participated in the research and are mentioned in the publication.
- However, research participants and people who have provided information for the research should not be promised complete anonymity if this cannot be guaranteed.
- For information on Personal Data Protection legislation in Finland, see: <https://tietosuoja.fi/en/data-protection>

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## “Do no harm” principle

- Harm takes place when a person is wronged or treated unjustly, or her rights are violated.
  - Varieties of harm: physical, mental, social, financial, cultural, and epistemic
- The challenge is to anticipate harms:
  - Direct and indirect harm
  - Immediate and delayed harm
- Moral responsibility for harm:
  - Acting or letting something happen (omissions)
  - Intended harm or merely foreseen harm

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## Important documents

- *Responsible conduct of research and procedures for handling allegations of misconduct in Finland* (Finnish Advisory Board on Research Integrity, 2012): [https://www.tenk.fi/sites/tenk.fi/files/HTK\\_ohje\\_2012.pdf](https://www.tenk.fi/sites/tenk.fi/files/HTK_ohje_2012.pdf)
- *Ethical principles of research with human participants and ethical review in the human sciences in Finland* (Finnish National Board on Research Integrity, 2019): [https://www.tenk.fi/sites/tenk.fi/files/lhmistieteiden\\_eettisen\\_ennakkoarviointin\\_ohje\\_2019.pdf](https://www.tenk.fi/sites/tenk.fi/files/lhmistieteiden_eettisen_ennakkoarviointin_ohje_2019.pdf)
  - The document covers ethical principles governing non-medical research with human participants and provides guidance in organizing the ethical review process.
  - For ethical principles and laws governing medical research in Finland, go to <https://vastuullinentiede.fi/en/planning> and look for "Medical research ethics in Finland." See also the Medical Research Act (488/1999).

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## Resources on research ethics 1/3

- Finnish National Board on Research Integrity (TENK): <https://www.tenk.fi/en>
- Responsible Research: <https://www.vastuullinentiede.fi/en>
- Responsible Conduct of Research (RCR) in Tampere University: <https://www.tuni.fi/en/research/responsible-research#expander-trigger--bf3c338a-62e8-4872-a580-05c8fbc59682>
- Research Integrity Advisors in Tampere University: contact Kristina Rolin ([kristina.rolin@tuni.fi](mailto:kristina.rolin@tuni.fi)) for more information
- Prof. Pekka Louhiala ([pekka.louhiala@tuni.fi](mailto:pekka.louhiala@tuni.fi)): Philosophy of medicine and medical ethics.

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## Resources on research ethics 2/3

- TUKIJA National Committee on Medical Research Ethics:  
<http://tukija.fi/en/frontpage>
- ETENE National Advisory Board on Social Welfare and Health Care Ethics (Ministry of Social Affairs and Health): <http://etene.fi/en/frontpage>
- All projects involving the use of animals in research require prior authorization from the Project Authorization Board: <https://avi.fi/en/en/about-us/our-services/animals/laboratory-animals>
- BTNK Advisory Board on Biotechnology (Ministry of Social Affairs and Health): <http://www.btnk.fi/en/index.html>
- GTLK Board for Gene Technology (Ministry of Social Affairs and Health); <http://geenitekniikanlautakunta.fi/en/frontpage>

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## Resources on research ethics 3/3

- *Agreeing on authorship. Recommendation for research publications (2019)*: [https://www.tenk.fi/sites/tenk.fi/files/TENK\\_suositus\\_tekijyys.pdf](https://www.tenk.fi/sites/tenk.fi/files/TENK_suositus_tekijyys.pdf)
- *The European Code of Conduct for Research Integrity*: <https://www.allea.org/wp-content/uploads/2017/05/ALLEA-European-Code-of-Conduct-for-Research-Integrity-2017.pdf>
- *Tutkimuseiikan eurooppalaiset käytännöt ja ohjeistus*: [https://allea.org/wp-content/uploads/2020/08/Finnish\\_European\\_Code\\_of\\_Conduct\\_digital-final.pdf](https://allea.org/wp-content/uploads/2020/08/Finnish_European_Code_of_Conduct_digital-final.pdf)
- Resnik, David. 2015. What is Ethics in Research & Why is it Important? <https://www.niehs.nih.gov/research/resources/bioethics/whatis/index.cfm>

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