

# Ethics for IT Research and Publication

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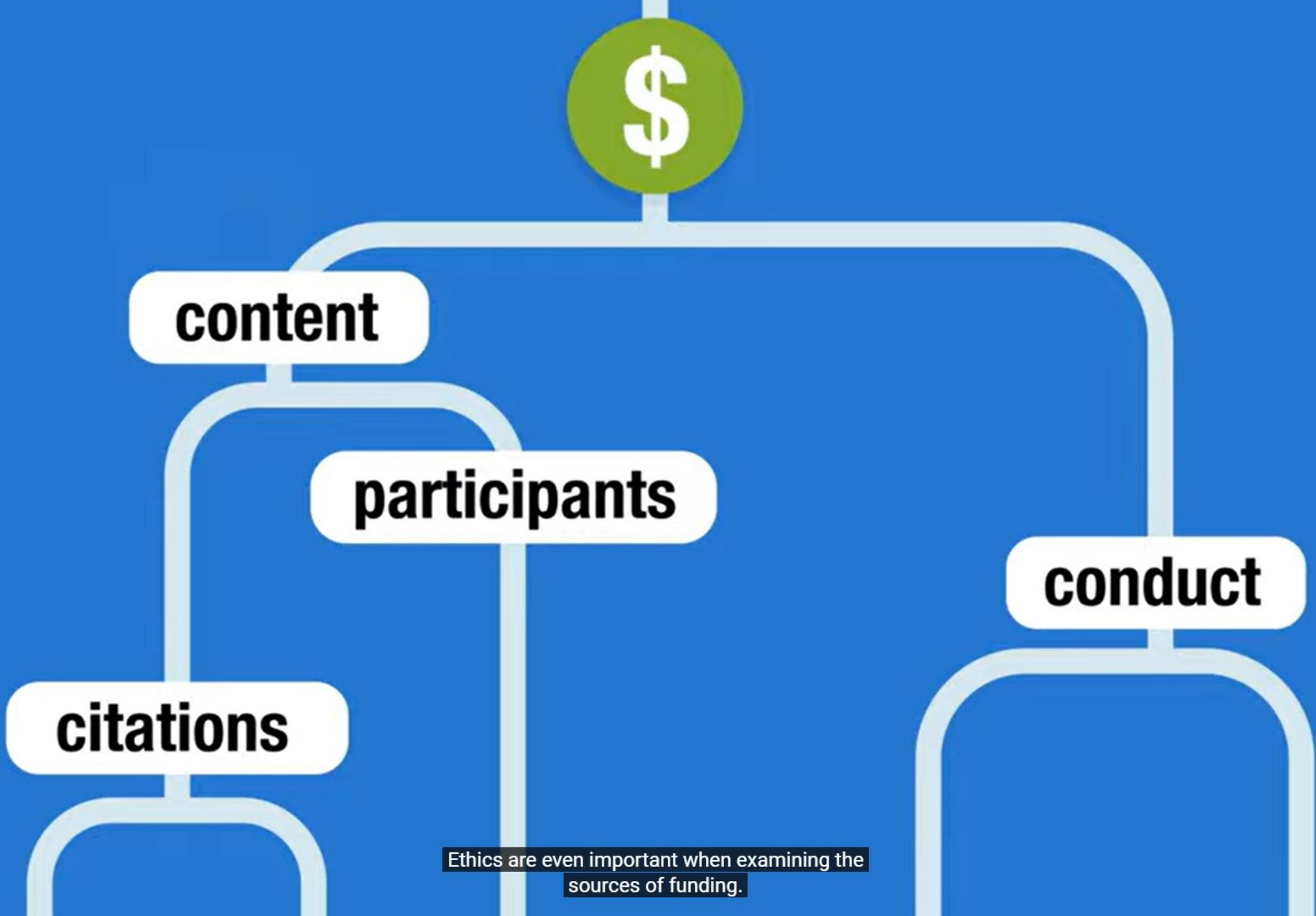
MASTERS IN INFORMATION SYSTEMS  
COMPUTER ETHICS



# Outline

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- Research Ethics
- Authorship
- Ethics Review Committee/ Board
- Promoting your research
- Publication Ethics



# What are ethics?

## What do we mean by digital projects and research?

# In research, ethics:

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- provides guidelines for the **responsible conduct of research**
- allows researchers and scholars to further educate themselves and **monitor their activities** in the conduct of research

ensure HIGH ETHICAL STANDARD

# “situated ethics”

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*Our understanding of and commitment to ethics are linked to our own experiences, positionalities, political orientations, and contexts*

# In conducting research

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1. principle of no harm
2. informed consent
3. data confidentiality

are paramount

# Ethical Principles that Guide Research

## Honesty

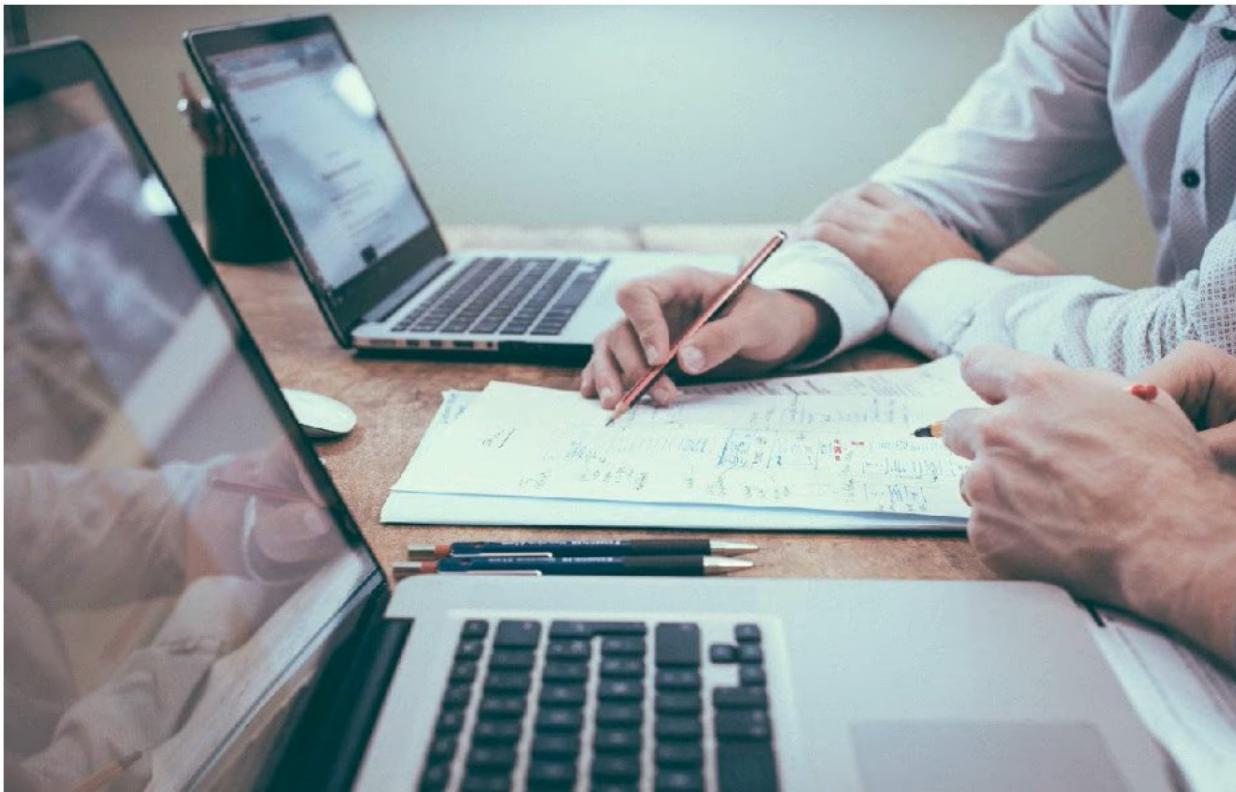
Researchers ought to honestly report data and results of the study, including the methods and procedures employed in data-gathering as well as publication status.

- **Researchers should NOT falsify, fabricate, and misrepresent data and results**



# Objectivity

Researchers should uphold objectivity and scientific rigor at all times.



Researchers should strive to avoid all forms of bias in research such as bias in experimental design, data analysis and interpretation, peer-review process, grant writing, and other facets of research.



# Confidentiality

Researchers should always uphold the principle of confidentiality.

One way of effectively doing this is to protect confidential communications, such as papers or grant submitted for publications, patient records...

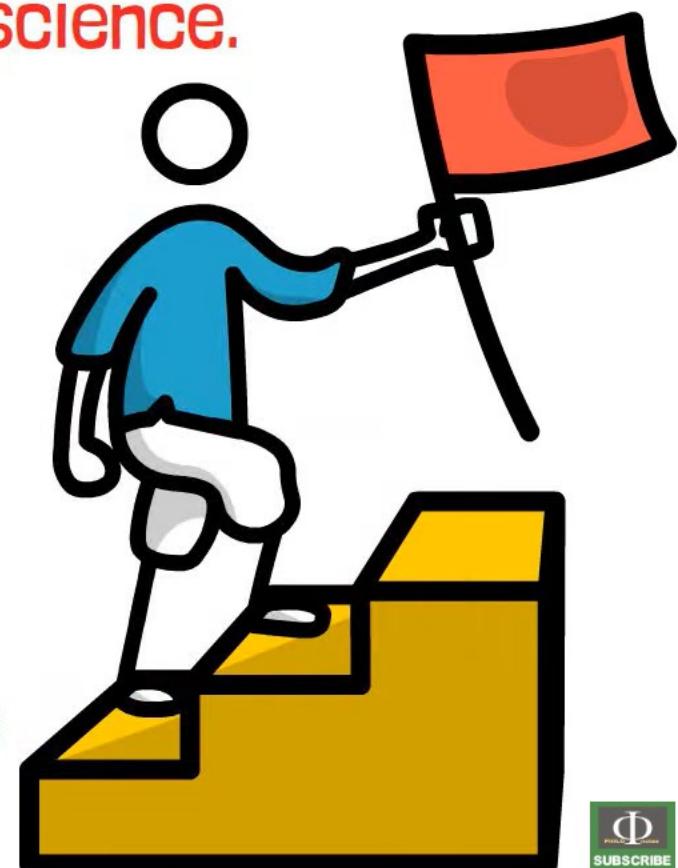


# Competence

Researchers are supposed to be knowledgeable and experts in their own discipline or field of specialization.



Researchers ought to take steps to promote competence in science.



**Researchers ought to maintain and improve their professional competence and expertise through life-long education and learning.**

# Integrity

Researchers ought to keep their promises and honor agreements, such as agreements with donors and research participants.



Researchers need to strive for consistency in thought and action.



# Legality



Research always has a legal dimension.



Researchers ought to obey laws and relevant institutional and governmental policies.

# Maturity and Openness

Knowledge is supposed to be free.



Researchers must willingly share data, results, ideas, and resources.

They must be open to constructive criticisms and new ideas.

# Respect for Intellectual Property

Researchers ought to honor copyrights, patents, and other forms of intellectual property.

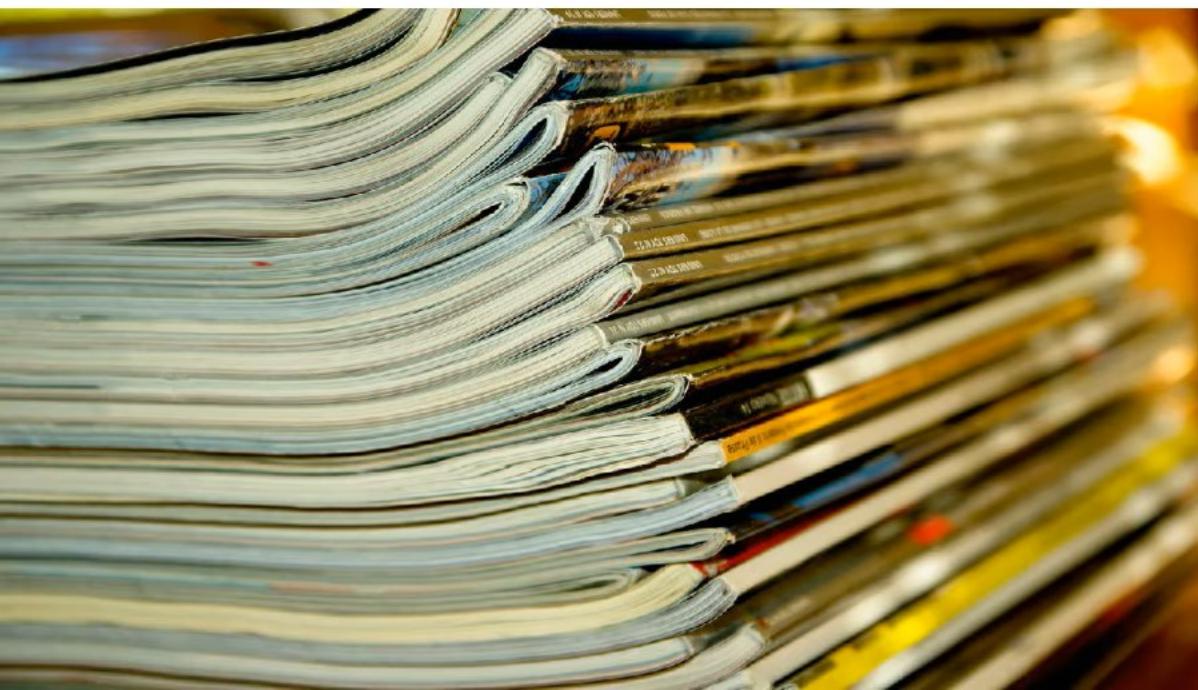


- Researchers should not use methods, data, and results owned by other researchers or scholars without permission or proper acknowledgment.
- Researchers should avoid plagiarism at all times.

# Responsible Publication



Researchers need to publish in order to advance knowledge and scholarships and not just to advance one's own career.



Researchers also need to avoid wasteful publication, such as publishing in predatory journals, and duplicative publication.



# Non-Discrimination

Researchers ought to avoid all forms of discrimination against colleagues and students on the basis of sex, race, ethnicity, and other factors that are related to their scientific competence and integrity.

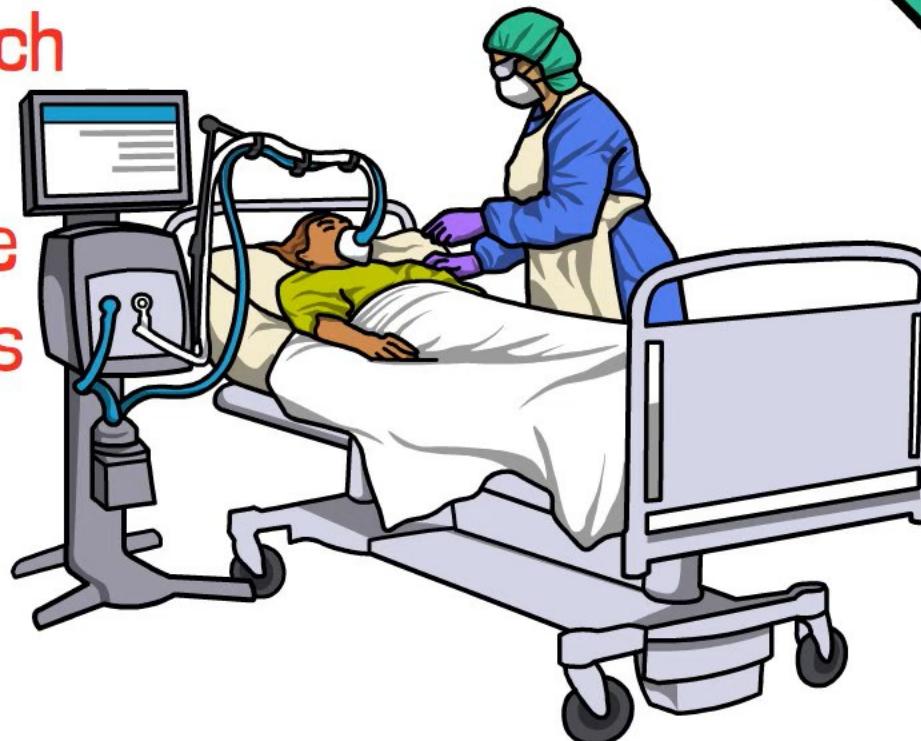


Senior researchers need to help educate, mentor, and advise students; they have to promote the welfare of their students and allow them to make their own decisions.

# Human Subjects Protection

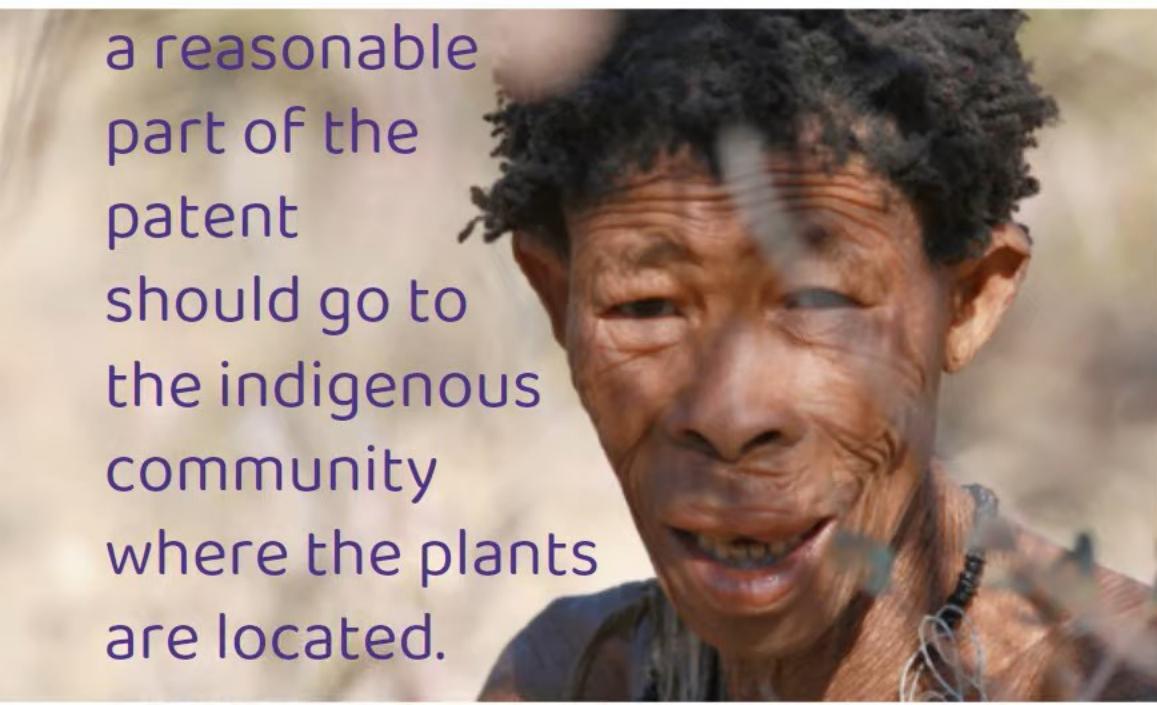
Researchers should respect human dignity, privacy, and autonomy at all times.

When conducting research on human subjects, researchers should take precautionary measures to minimize, if not completely avoid, harms and risks.



They also need to maximize the benefits that participants may get from the results of the study.

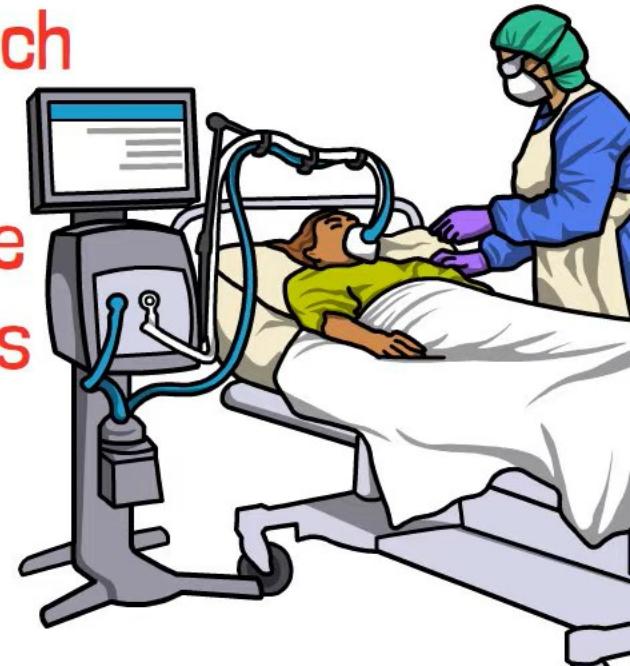
If a researcher discovers a cure for a particular disease through her research on indigenous plants, a reasonable part of the patent should go to the indigenous community where the plants are located.



# Human Subjects Protection

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# Animal Care

In recent years,  
we have what we  
call “animal rights”



## Researchers should respect animal rights at all times.

- They ought to show utmost care for animals when using them in research.
- Researchers should NOT conduct unnecessary or poorly designed animal experiments.

# Social Responsibility

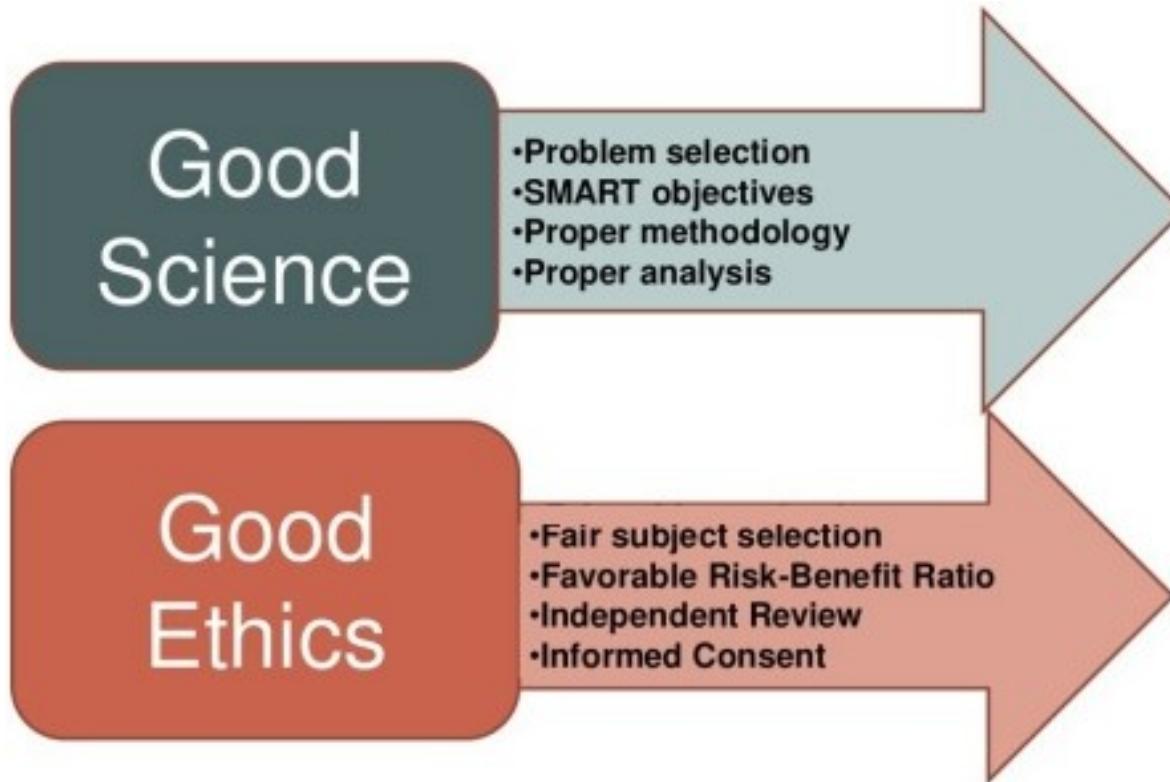
Researchers should conduct research not only for the advancement of their career but for the good of society as a whole.



**Researchers  
should strive  
to promote  
social good  
and mitigate  
social harms.**

# Ethical Practice

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# Data Gathering and Data Analysis

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Ethical data gathering is built upon **informed consent, confidentiality, and anonymity**.

Data analysis stage carries ethical concerns:

- potential manipulation of data
- research findings must be grounded in data, not invention

# **Ethical Writing**

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Written research results should be fair and accurate representation of the findings.

**Presentation and dissemination** of research findings also require consideration.

# Authorship

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- “Who wrote this?”
- Major criterion with which employers evaluate academic personnel for employment, promotion, and tenure.
- In simpler scenario, one person will complete a research project and write about it: done.
- Collaboration introduces a lot of complexity.

# Authorship matters because..

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- People use various properties of how author names are recorded, and what role each author actually played, to measure the academic merit and contribution
  - Order of names
  - Designated roles

## THE AUTHOR LIST: GIVING CREDIT WHERE CREDIT IS DUE

### The first author

Senior grad student on the project. Made the figures.

### The third author

First year student who actually did the experiments, performed the analysis and wrote the whole paper. Thinks being third author is "fair".

### The second-to-last author

Ambitious assistant professor or post-doc who instigated the paper.

Michaels, C., Lee, E. F., Sap, P. S., Nichols, S. T., Oliveira, L., Smith, B. S.

### The second author

Grad student in the lab that has nothing to do with this project, but was included because he/she hung around the group meetings (usually for the food).

### The middle authors

Author names nobody really reads. Reserved for undergrads and technical staff.

### The last author

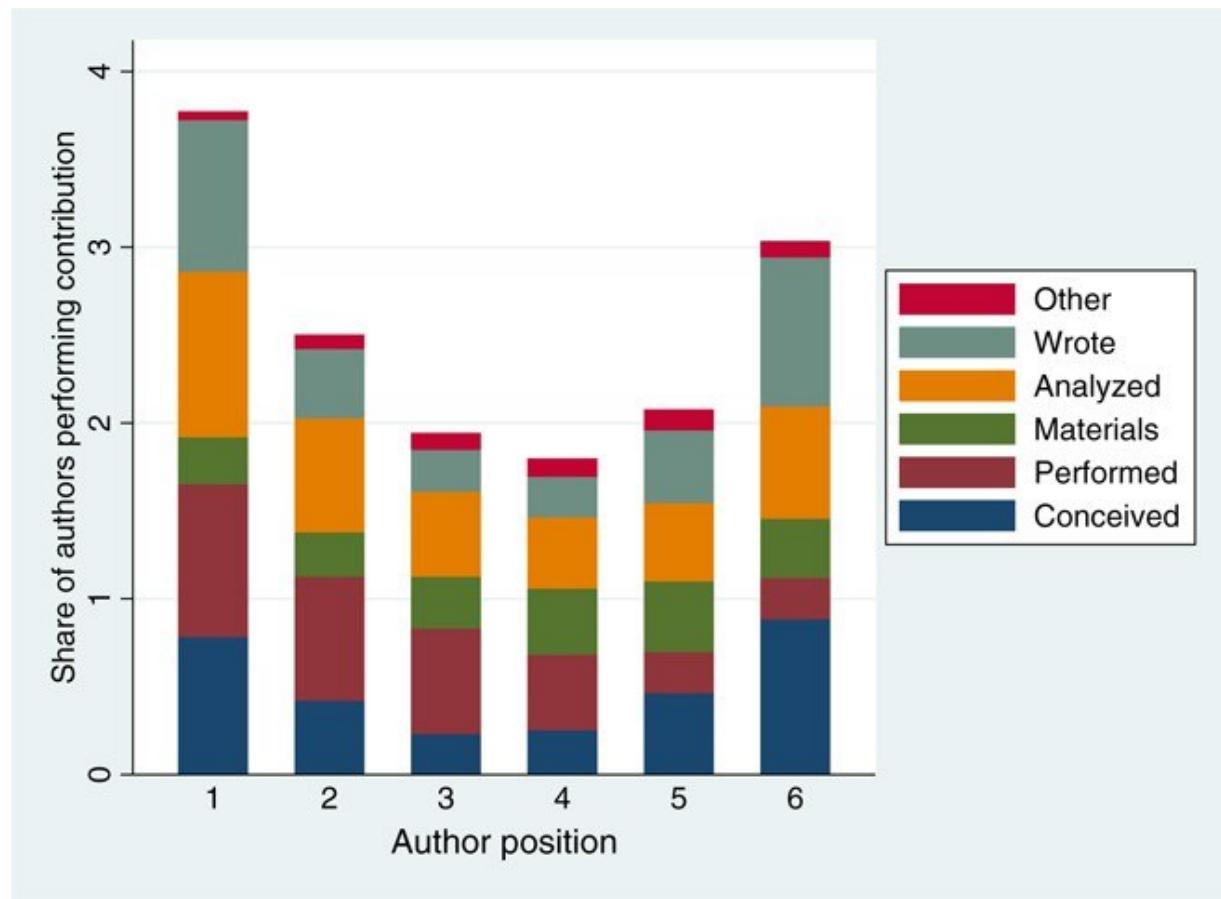
The head honcho. Hasn't even read the paper but, hey, he/she got the funding, and their famous name will get the paper accepted.

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## AUTHOR CONTRIBUTIONS

F.A.L. proposed the approach in fine-tuning a zero-shot model for emotion classification and conducted the experiments. F.B.L. also checked the soundness of the proposal and guided in the pre-processing and conduct of experiments. F.C.L. was in-charge in the data collection and analysis of experimental results. F.D.L. checked the annotated corpus and contributed in the analysis of classification results. All authors contributed in completing the paper and had approved its final version.

**Fig. 1 Share of authors performing a particular contribution; stacked for each author position.**



Henry Sauermann, and Carolin Haeussler Sci Adv  
2017;3:e1700404

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Science Advances  
AAAS

# Authorship Order

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- Rules of the order vary significantly across disciplines.
  - Some fields list authors in the order of contribution
  - Others list authors in alphabetic order

# Authorship Roles

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- First Author: the position *implies* that this author contributed the most (if not in alphabetical order, that is)
- Corresponding Author: the person to contact if you have any inquiries about the paper
  - Responsible for the actual administrative pipeline of the publication
  - Primary contact point between the publisher and the authors
  - The person who uploads the manuscript online (to be reviewed)

# ACM Guideline on Authorship

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- Anyone listed as Author on an ACM manuscript submission must meet all the following criteria:
  - they have made substantial intellectual contributions to some components of the original work described in the manuscript; and
  - they have participated in drafting and/or revision of the manuscript and
  - they are aware the manuscript has been submitted for publication; and
  - they agree to be held accountable for any issues relating to correctness or integrity of the work.
- Other contributors may be acknowledged at the end of the paper, before the bibliography.
- <https://www.acm.org/publications/policies/authorship> (revised August 2018)

## ACKNOWLEDGMENTS

The authors would like to thank Bob Binder for helpful information and discussions when we began work on this paper. We would also like thank all who attended the CREST Open Workshop on the Test Oracle Problem (21–22 May 2012) at University College London, and gave feedback on an early presentation of the work. We are further indebted to the very many responses to our emails from authors cited in this survey, who provided several useful comments on an earlier draft of our paper. P. McMinn is corresponding author.

## IX. ACKNOWLEDGEMENTS

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## ACKNOWLEDGEMENT

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Simultaneous submission  
to more than one journal

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# Ethics in Human Studies

# The Tuskegee Experiment, 1932-1972 CE



without their  
informed consent.

# The Tuskegee Experiment, 1932-1972 CE

death  
or  
severe, long-term  
health problems

# “Monster” Study, 1939 CE

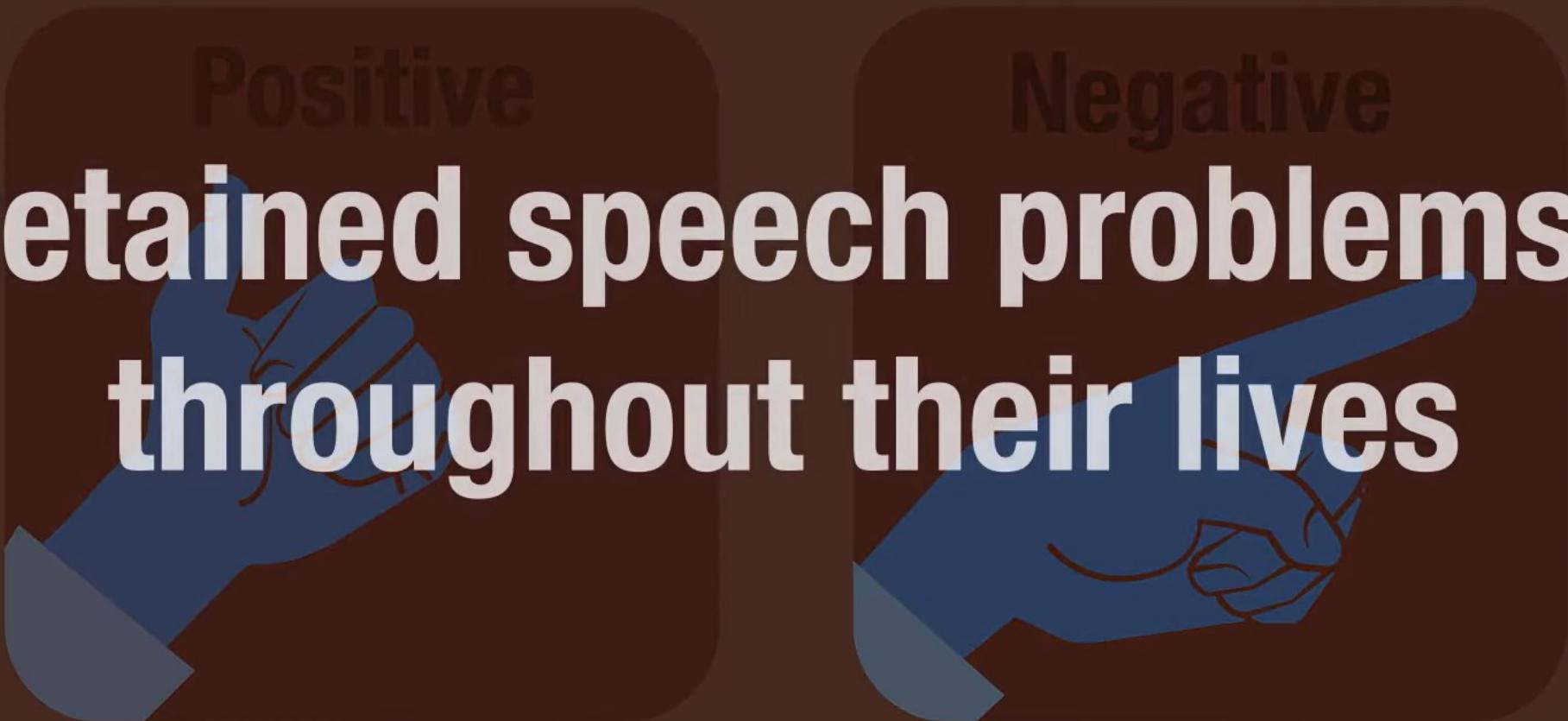
Positive



Negative



# “Monster” Study, 1939 CE



Positive                      Negative

**retained speech problems  
throughout their lives**

recognition  
and fame

to publish a  
finding first

to get a project  
done quickly

to climb up the  
academic ladder

# Ethical Violations

- = public mistrust of science
- = harm to individuals
- = loss of funding
- = loss of jobs

# The Belmont Report

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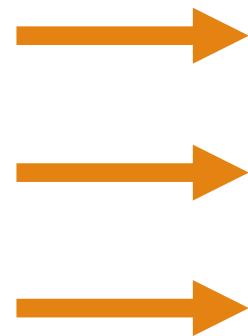
The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, created as a result of the National Research Act of 1974, published the Belmont Report in 1979. Following the outrage to unethical practice such as the Tuskegee Syphilis Study.

# The Belmont Report

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## 3 CORE PRINCIPLES

1. Respect for persons
2. Beneficence
3. Justice



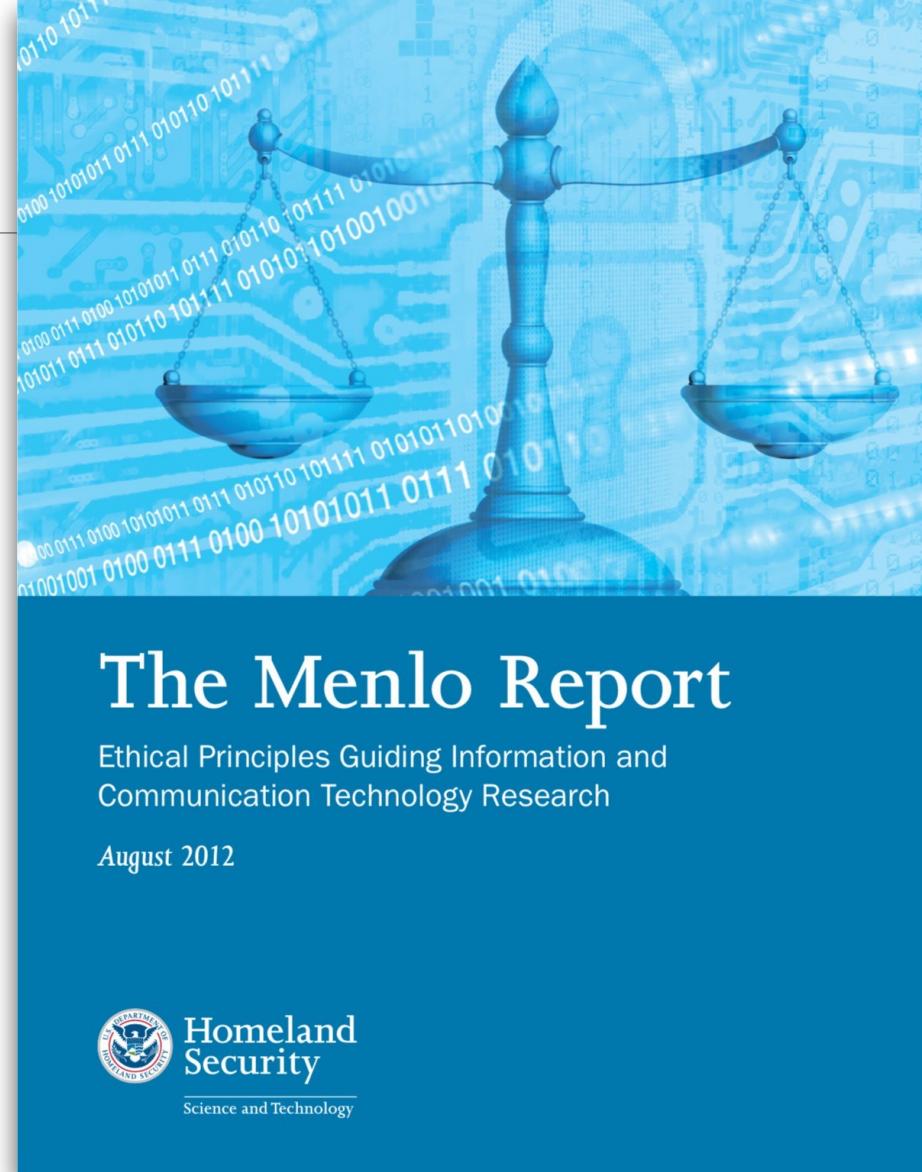
## 3 KEY CONCERN

1. Informed consent
2. Assessment of risks and benefits
3. Selection of subjects

# Menlo Report

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- An ethical framework for research in Information & Communication Technology (issued in 2012: see [https://www.impactcybertrust.org/  
link\\_docs/Menlo-Report.pdf](https://www.impactcybertrust.org/link_docs/Menlo-Report.pdf))
- Adds the fourth principle: “**Respect for Law and Public Interest**”
  - Engage in legal due diligence; Be transparent in methods and results; Be accountable for actions.



# Menlo Report: Respect for Persons

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- **Informed consent:** “a process during which the researcher accurately describes the project and its risks to subjects and they accept the risks and agree to participate or decline”
- Justifiable exceptions are allowed, primarily when it is difficult to identify all individuals who may be affected
  - What if you send a PR, generated by a machine learning model, to an open source project used by hundreds of other projects?

# Menlo Report: Beneficence

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- Balancing potential benefits and harms: “ICT researchers should identify benefits and potential harms from the research for all relevant stakeholders, including society as a whole, based on objective, generally accepted facts or studies”
- “Researchers should systematically assess risks and benefits across all stakeholders. In so doing, researchers should be mindful that risks to individual subjects are weighed against the benefits to society, not to the benefit of individual researchers or research subjects themselves.”

# Menlo Report: Beneficence

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- Mitigating realised harms: sometimes you have to take risk, and bad things and/or side-effects can/will happen
- Researchers should develop mitigation plan
  - anticipate the worst case scenario
  - prepare a list of parties to notify
  - involve institutional risk management mechanism if necessary

# A Case Study

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- A research team led by Richard Kemmerer, UCSB, hijacked a criminal botnet for 10 days, and collected the data stolen by the bots!
  - An impressive feat of security research/hack, but also
  - A fascinating story about balancing risks, risk mitigation, etc
  - “How to steal a botnet and what can happen when you do” - Richard Krmmrer, Google TechTalk, 2009 (<https://youtu.be/2GdgoQJa6r4?t=3026>)

# Menlo Report: Justice

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- “It is important to distinguish between purposefully excluding groups based on prejudice or bias versus purposefully including entities who are willing to cooperate and consent, or who are better able to understand the technical issues raised by the researcher.
- The former raises Justice concerns, while the latter demonstrates efforts to apply the principles of Respect for Persons and Beneficence and still conduct meaningful research.”

# Menlo Report: Respect for Law and Public Interest

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- Was implicit in Belmont Report; made into the fourth principle in Menlo Report
- “There may be a conflict between simultaneously satisfying ethical review requirements and applicable legal protections. Even if a researcher obtains a waiver of informed consent due to impracticability reasons, this may not eliminate legal risk under laws that require consent or some other indication of authorization by rights holders in order to avoid liability.”
- “Until REBs can overcome limited ICT expertise on committees and in administrative staff positions, they may not be capable of recognizing that certain ICT research data actually presents greater than minimal risk and may erroneously consider it exempt from review or subject it to expedited review procedures that bypass full committee review.”

# Menlo Report: Respect for Law and Public Interest

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- Compliance: respect and try to follow the legal restrictions. “If applicable laws conflict with each other or contravene the public interest, researchers should have ethically defensible justification and be prepared to accept responsibility for their actions and consequences.”
- Transparency and Accountability
  - Transparency: clearly communicate the purpose of research, and how the results will be used
  - Accountability: research activities should be documented and made available responsibly

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# Research Ethics Board



Source: [https://intentionalmuseum.files.wordpress.com/2014/03/1609\\_color\\_nit-picking\\_irb.jpg](https://intentionalmuseum.files.wordpress.com/2014/03/1609_color_nit-picking_irb.jpg)

Every university or research institution must, legally, have its own or an affiliated *Ethics Review Board*.

# Activity

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Review Joshua Tabak and Vivian Zayas's academic article [[tinyurl.com/tabakzayas](http://tinyurl.com/tabakzayas)] and their summary of it for the New York Times [[tinyurl.com/gaydarscience](http://tinyurl.com/gaydarscience)], and discuss:

- What kinds of “human subjects” are involved in this study?
- Is a social media photo of oneself an extension of the self?
- Does their methodology raise any ethical concerns?

Further reading: Patrick Sweeney, "Images of Faces Gleaned from Social Media in Social Psychological Research on Sexual Orientation," 2017 [[tinyurl.com/sweeneyimages](http://tinyurl.com/sweeneyimages)]

# Case study I: "Bad Science" study about "Rapid Onset Gender Dysphoria"

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Skim read this [research study](#) and about the [reaction regarding the scientific validity of this study](#) and discuss:

- This study was approved by an Institutional Review Board(IRB). What may the IRB have missed?
- What are some the consequences of this study? Is it fair?
- What, if any, other measures could have been taken in this study?

*Note that the journal has issued a [notice of republication](#) following feedback from the scientific community.*

# Case study II: USC study on “Black Twitter”

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Read this [brief article](#) and discuss:

- Does this project involve “human subjects”?
- Are Tweets “public” data?
- In reference to the article, why did this project invoke such controversy? Do you agree with the article?

*Note that USC has removed the study from its website, otherwise we would also examine its site directly too.*

# Case study III: “Breaking the Black Box”

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Check out [ProPublica's](#) project [“Breaking the Black Box,”](#) and discuss:

- What kinds of tools and information is this project producing?
- What levels of impact does it aim to take into account?
- Does this project involve “human subjects”?

Also check out: ProPublica's series of articles on ["Machine Bias: Investigating Algorithmic Injustice"](#) and the Pew Research Center's [article about Facebook Algorithms and personal data](#)

# Case study IV: The gender API

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Check out [the Gender API's website](#) and click around its various sections to read about how the API works, and discuss:

- What kinds of information is this API producing?
- Who might be the users of this API? What may be their intentions in using this API?
- Does the use of this API raise any ethical concerns?

# Topic Assignments

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Case Study	Students	Peer Reviewers
<b>Case Study I : "Bad Science" study about "Rapid Onset Gender Dysphoria"</b>	1. Montas 2. Lustan 3. Clemente	
<b>Case study II: USC study on “Black Twitter”</b>	1. Agawa 2. Baldivino 3.	
<b>Case study III: “Breaking the Black Box”</b>	1. Bacho 2. 3.	
<b>Case study IV: The gender API</b>	1. Fulo 2. Pena 3. Aragon	

# References

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Ethics for Digital Projects and Research - <https://github.com/dhsouthbend/ethics>

Ethics in Research, <https://www.youtube.com/watch?v=VcbPqhwJzcg>

Research Ethics | Ethics in Research <https://www.youtube.com/watch?v=mtLPd2u4DiA>

Belmont Report <https://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/index.html#xbasic>

Menlo Report