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Being a researcher

Research evaluation

Outline

- Ethics in the
- Different kinds of evaluation
    - single result, a research effort, an individual (for promotion), a research unit (group, department, university)
- Peer review
- How is a research result evaluated for publication?
    - Paper/artifact
- How can research impact be evaluated?
- Bibliometrics
    - What is it?

Ethics (in research)

- Ethics is a branch of philosophy that involves systematizing, defending, and recommending concepts of right and wrong conduct (in research)

- Research integrity is adherence to the ethical principles and professional standards essential for the responsible practice of research

Ethical issues

- They can arise in two main cases
  - irrespective of the research area
    - because of the way a researcher behaves in relation to others (students, peers, own organization, funding body, …)
    - plagiarism is a typical example
- depending on the specific area and scope of the research
  - animal experimentation is an example in life sciences

From general ethical values to their reification in research

- General ethical values that apply in everyday life
    - honesty, fairness, objectivity, openness, trustworthiness, respect for others, confidentiality
- Reification in research (standards)
    - openness in sharing research results, fairness in reviewing research proposals, respect for colleagues and students, honesty in reporting research results
- Serious violation of standards are called scientific misconduct

Misconduct

- More generally, a significant departure from accepted practices committed intentionally, or knowingly, or recklessly, proven by preponderance of evidence

- Scientific practices may vary according to disciplines

- (Of course, differences of opinions are excluded!)

Misconduct in in proposing, performing, reviewing research or reporting research results

US Office os Science and Technology Policy

- Fabrication
  - making up data or results
- Falsification
  - manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record
- Plagiarism
  - appropriation of another person's ideas, processes, results, or words without giving appropriate record and with the intention that they be taken as the work of the deceiver

Overselling

- Lesser form of misconduct that makes unjustified claims to make own'd work "look better"
  - Unfortunately, pretty common
- Similar to this
  - Check if your work is cited and be negative if not
  - Kindly and indirectly ask to cite your work

Plagiarism

- Two main forms: ideas and text
- Plagiarism of ideas
  - Appropriation of an idea (an explanation, a theory, a conjecture, a research proposal, …) in whole or in part without giving credit to originator
    - can be quite subtle
- Plagiarism of text
  - Copying a portion of text, possibly with cosmetic changes, from another source without giving credit or enclosing the text in a proper quotation

Self-plagiarism

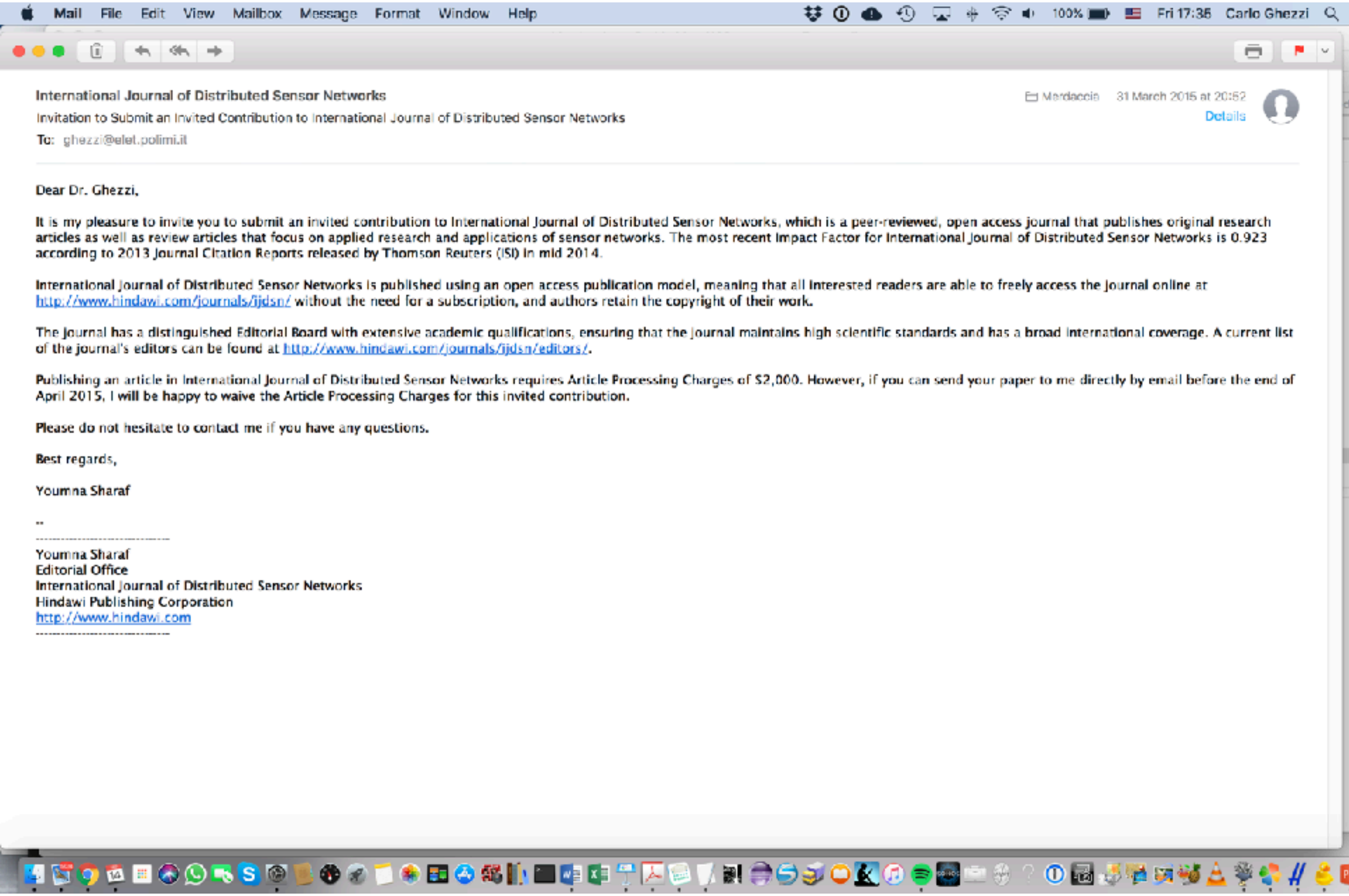
- Can range from
  - including pieces of text (or figures, or any other material) from one's paper into another paper by the same author, to
  - duplicating the contents of previous papers in a new form, without citing and explaining why (for example, it may be done to state complex material into a tutorial form)
- The case of conference papers turned into journal papers
  - typically, but not necessarily, "best papers"
  - often 30% additional new material required, besides proper citation

The LPU syndrome

- A lesser form of publication misconduct
- "Publish or perish" has led researchers to look for "least publishable units"
- This is not recommended, and easily generates self-plagiarism

Being trapped by predatory publishers

- A lesser form of publication misconduct
- Try to get papers published no matter what the quality of the venue is
- Try to get "recognized" by being listed in "international committees"
  - often young unexperienced researchers fall into the trap..



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Fri 17:35 Carlo Ghezzi

International Journal of Distributed Sensor Networks

Invitation to Submit an Invited Contribution to International Journal of Distributed Sensor Networks

To: ghezzi@elet.polimi.it

Mendaccia 31 March 2015 at 20:52

Details

Dear Dr. Ghezzi,

It is my pleasure to invite you to submit an invited contribution to International Journal of Distributed Sensor Networks, which is a peer-reviewed, open access journal that publishes original research articles as well as review articles that focus on applied research and applications of sensor networks. The most recent Impact Factor for International Journal of Distributed Sensor Networks is 0.923 according to 2013 Journal Citation Reports released by Thomson Reuters (ISI) in mid 2014.

International Journal of Distributed Sensor Networks is published using an open access publication model, meaning that all interested readers are able to freely access the journal online at http://www.hindawi.com/journals/ijdsn/ without the need for a subscription, and authors retain the copyright of their work.

The Journal has a distinguished Editorial Board with extensive academic qualifications, ensuring that the Journal maintains high scientific standards and has a broad international coverage. A current list of the journal's editors can be found at http://www.hindawi.com/journals/ijdsn/editors/.

Publishing an article in International Journal of Distributed Sensor Networks requires Article Processing Charges of $2,000. However, if you can send your paper to me directly by email before the end of April 2015, I will be happy to waive the Article Processing Charges for this invited contribution.

Please do not hesitate to contact me if you have any questions.

Best regards,

Youmna Sharaf

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Youmna Sharaf
Editorial Office
International Journal of Distributed Sensor Networks
Hindawi Publishing Corporation
http://www.hindawi.com

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100% Fri 17:37 Carlo Ghezzi

SERSC Secretariat

Invitation for Editorial Committee for WMCIS 2015 and IJWMCIS

To: Ghezzi Carlo, Cc: yvette@sersc.org

Merdaccia 17 March 2015 at 16:18

Details

SS

Dear Carlo Ghezzi,

Greetings!

On behalf of the Organizing Committee of the First International Workshop on Security Technology for Smart Device (STSD 2015) and Editor-in-chief of International Journal of Security Technology for Smart Device (IJSTSD), we are very delighted to invite you to be one of the Editorial Committee of our prestigious International Workshop and Editorial Board of our Journal.

The goal of this Workshop is to bring together the researchers from academia and industry as well as practitioners to share ideas, problems and solutions relating to the multifaceted aspects of Security Technology for Smart Device.

Our Journal provides a chance for academic and industry professionals to discuss recent progress in the area of Security Technology for Smart Device. To bridge the gap of users who do not have access to major databases where one should pay for every downloaded article this online publication platform is open to all readers as part of our commitment to global scientific society.

It is our honor to have you as one of our Workshop Editorial Committee and Journal Editorial Board.

For more information about the Workshop, please visit the workshop Website http://interworkshop.org/STSD2015/ and journal website http://www.sersc.org/journals/IJSTSD/

We are looking forward for your positive response to our invitation.

Thank you very much and more power!

Best Regards,

YVETTE GELOGO
SERSC Secretary

Software Eng. 2 13

Siete invitati tutti a partecipare!

Contributing to proliferation of low quality venues

- Detrimental to the image of the scientific community
- Give wrong targets to young researchers
- Waste time of precious peer review time
- Make it harder to distinguish the good from the bad

Double submissions

- This is another form of misconduct in publication, close to self-plagiarism
- Justified by the pressure to publish, one tries several routes in parallel
- Can be conferences and journals
- NEVER do it!
- What if they are both accepted? Why waste reviewers' time?

Resubmitting the same paper after rejection

- Nothing bad per se
- But wrong if you ignore previous reviews and just try bto get another chance

More generally

- You are part of the research community
- The community survives based on self-management, trust and integrity
- Don't break the rules, contribute to its prosperity

Additional ethical issues in publication

- Gender issues, also in language
- Cultural
- ...

Misconduct as a reviewer

- Take reviews seriously, allocate time and effort to carefully evaluate then paper
- Be constructive and coherent
- Avoid bias (wrt to authors, language, country, institution, subject)
- Remember that if you must contribute: not only submit work for review, but also act as a reviewer

Misconduct in treating data

- Deliberate manipulation to deceive others
- Misleading data due to poor experimental design or measures or incorrect manipulation
  - lack of internal quality control, calls for specific research group management policies
- Lack of protection policies for sensible data collected
- Unwillingness to share

Misconduct in confidentiality

- Very often you are exposed to confidential information: NEVER disclose it deliberately, and carefully protect the information
    - preliminary versions of papers given to you for an opinion, where the author asks for confidentiality ("do not distribute")
    - submitted papers you are asked to review
    - list of candidates for an open position for which you act as a reviewer
    - research proposal you are asked to evaluate
    - identity of reviewers or authors in blind reviews
    - any other activity in which you are explicitly required not to disclose information

Conflict of interest

- COI arises whenever you have impediments to making objective judgements and preserving integrity because of your relation with the subject matter

- COI can be objective, and seen by others, or subjective

- Very often, the rules for objective COI are explicitly stated and enforced

- Subjective COI requires you to be honest

Examples

- Objective
  - reviewing a paper from one of your recent co-authors, or one of your students, or a member of your department
  - participating in decisions concerning promotion of a relative or partner (the latter may be subjective)
- Subjective
  - you feel uncomfortable reviewing because of your personal relation (a friend, someone you had bad past experience with)

COI can be on both sides

- Examples
  - When you submit a paper you may list people you have COI with
  - You may signal potential (implicit) COI from people you feel would not treat you fairly

Misconduct in authorship and giving credit

- You should co-author a paper only if you have given substantial contribution
- If you have given substantial contribution, you should be a co-author
- Make an upfront open discussion about authorship and ordering
- Always remember that the list of authors establish both accountability and credit
- Acknowledge others who gave you support
- Give credit to those on which your work is based
- (see also plagiarism…)

Misconduct in reporting mistakes and negligence

- Your work may turn out to contain mistakes, inconsistencies, or inaccuracies

- If you become aware of that, do not ignore or hide them, but make public statements, e.g. in your web site

Misconduct in managing funding

- Use funding money wisely and according to the scope for which you received funding
- Remember that in most cases that you received public funding and this is taxpayers' money
- You don't wish to shake the public confidence in the integrity of science

Misconduct in reporting to violations of standards

- You may witness objective, serious violations to standards
- Don't become a partner in misconduct, because misconduct weakens the health of the self-regulating research processes
- Institutions have procedures in place to investigate, report, and react objectively, firmly, and unemotionally
- Confidentiality is essential

Misconduct in handling intellectual property

- Scientific research may lead to results that have practical value
- Intellectual property is a legal right to control the application of an idea in a specific context (through a patent) or control the expression of an idea (through a copyright)
- It is very important that all who have contributed substantially to the idea participate in its exploitation

Cost of misconduct

https://www.ithenticate.com/hs-fs/hub/92785/file-5415630-pdf/docs/ithenticate-misconduct-report-2012.pdf

- Individual costs
  - loss of job
  - revoked PhD
  - revoked awards
  - lawsuits
  - questioned integrity
- Capital costs
  - lawsuits
  - legal costs
  - investigation costs
  - loss of grant money
- Brand costs
  - damaged reputation and brand name
  - retractions
  - talent loss
  - sales loss
- Human costs
  - wrong decisions (e.g., misdagnosis) based flawed research results
  - research costs
  - loss of time and effort

Publication ethics

- Can check here, also for interesting cases
  - https://publicationethics.org/

Ethical issues for research that involves or affects humans or animals or environment

Ethical issues arising from research

- Ethical concerns regarding humans and animals are traditionally intrinsic in health sciences, which often involves human or animal participants

- Social sciences also developed guidelines for researchers working with human participants

- Modern research in all areas of technology increasingly touches ethical sensitive issues, because it affects humans

  - in ICST: social media, self-driving cars, big data

History

- The Nuremberg Code (1947)—mainly concerned with biomedical research

> The voluntary consent of the human subject is absolutely essential. This means that the person involved should have legal capacity to give consent; should be so situated as to be able to exercise free power of choice…, and should have sufficient knowledge and comprehension of the subject matter involved as to enable him to make an understanding and enlightened decision.

- International Covenant on Civil and Political Right (UN 1966)

> No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment. In particular, no one shall be subjected without his free consent to medical or scientific experimentation.

Consent

- Key in research involving humans
- What is it?
    - Permission or agreement — but not just any permission or agreement
- Only valid consent can do that
    - cannot threaten to get consent

… voluntary, uncoerced decision, made by a sufficiently competent autonomous person on the basis of adequate information and deliberation to accept rather than reject some proposed course of action (Gillon 1986)

Animals in research

- Ethical guidelines available (International Council for Laboratory Animal Science)
- 3Rs principle
    - Replacement
        - use of non-animal methods
    - Reduction
        - methods reducing number of animals used
    - Refinement
        - methods that improve animal welfare

Dual-use research for life sciences (1)

- Dual Use Research of Concern (DURC) is life sciences research that, based on current understanding, can be reasonably anticipated to provide knowledge, information, products, or technologies that could be directly misapplied to pose a significant threat with broad potential consequences to public health and safety, agricultural crops and other plants, animals, the environment, materiel, or national security.

https://oir.nih.gov/sourcebook/ethical-conduct/special-research-considerations/dual-use-research

Dual-use research for life sciences (2)

- Will an intermediate or final product of your research make a vaccine less effective or ineffective? YES / NO
- Will the final or intermediate product of your research confer resistance to antibiotics or antivirals in ways that are inherently different than those published previously? YES / NO
- Will your work enhance the virulence of a pathogen or render a non-pathogen virulent? YES / NO
- Will the results of your work increase the transmissibility of any pathogen? YES / NO
- Will your research result in alteration of the host range of a pathogen? YES / NO
- Will your research result in a product or intermediate that that may prevent or interfere with diagnosis of infection or disease? YES / NO
- Does your research enable “weaponization” of an agent or toxin? YES / NO
- Even though your research did not involve any of the aforementioned seven criteria, and recognizing that your work product or results of your research could conceivably be misused, is there the potential for your results/product to be readily utilized to cause public harm? YES / NO

Dual-use research for life sciences (3)

- If the answer is "No", no further action is required, but the PI should conduct an ongoing assessment that this continues to be the case and must file an annual report of that assessment.

- If one or more of the seven experimental effects/categories listed above can potentially occur, the Institutional Biosafety Committee (IBC) working with the PI assesses if the criteria defining DURC would potentially be met. Again if the answer is "No", no further action is required, but the PI should conduct an ongoing assessment that this continues to be the case, and must file an annual report of that assessment.

- If the criteria defining DURC would potentially be met, the IBC working with the PI must develop and implement a risk management plan based on the risk assessment. The conduct and or communication of the research findings must adhere to the risk management plan with ongoing oversight by the IBC with respect to DURC and in consultation with the Intramural Research's Dual Use Committee as appropriate.

"Dual use" can be generalized to other areas

- Risks for environment
- Risks for human lives
- Social risks

Privacy, confidentiality

- 'Privacy' and 'confidentiality' often used interchangeably
- Related but not identical concepts
- Privacy refers to the right to control access to oneself, and includes physical privacy such as ensuring curtains are closed during physical examinations
- Privacy may also relate to information about oneself, and information privacy laws regulate the handling of personal information through enforceable privacy principles
- Confidentiality relates to information only. The legal duty of confidentiality obliges health care practitioners to protect their patients against inappropriate disclosure of personal health information.

Institutional ethics review committees

- An institutional review board (IRB), also known as ethics committee (EC), is a committee that applies research ethics by reviewing the methods proposed for research to ensure that they are ethical

- They are formally designated to approve (or reject), monitor, and review research involving humans

- The purpose is to assure that appropriate steps are taken to protect the rights and welfare of humans participating as subjects in a research study

- Almost all countries have regulations or guidelines governing human subject studies and the ethics committees that oversee them. However, the organizational responsibilities and the scope of the oversight purview can differ substantially, especially in the domain of non-medical research.

Ethics committees in medical research

- According to Directive 2001/20/EC, an Ethics Committee is
    - an independent body in a member state of the European Union, consisting of healthcare professionals and non-medical members, whose responsibility is to protect the rights, safety and well being of human subjects involved in a clinical trial and to provide public assurance of that protection, by, among other things, expressing an opinion on the clinical trial protocol, the suitability of the investigators involved in the trial and the adequacy of facilities, and on the methods and documents to be used to inform trial subjects and obtain their informed consent.

Looking forward: ethics as a component of a research

- Research in many areas increasingly touches ethic-sensitive aspects

- "Dual-case" situations arise more ands more

- Progress of research and transfer into practice increasingly rapid

- Ethical issues should be studied while research takes place, not as an after-fact

Valuable documents available on-line

- https://www.nap.edu/catalog/12192/on-being-a-scientist-a-guide-to-responsible-conduct-in
- https://ec.europa.eu/research/science-society/document_library/pdf_06/textbook-on-ethics-report_en.pdf
-