University of Zagreb Faculty of Agriculture
Svetosimunska street 25, 10000 Zagreb, Croatia
Contact: harissa@agr.hr
www.agr.hr

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Ethical aspects of research – review of EU Charter for Researcher and EU Code of Conduct for Recruitment

prof. Ines Drenjančević, MD, PhD
Faculty of Medicine Osijek, University J. J. Strossmayer Osijek, Croatia

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Questions

- 1) A colleague has helped your research financially; do you need to include her/him as an author at your publication?
- 2) Ethical committee asks for Informed consents but your research is already finalized. What to do?
- 3) Pharma company pays you to give a lecture on a drug you really do not believe it works better that standard therapy- will you take it? 4) Od kolege je korištena oprema: da li treba participirati u objavljivanju kao autor?
- 5) You are invited to congress but do not have new results- would you present old stuff?

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Outline

- Scientific integrity
- The European Charter for Researchers
- Scientific misconduct
- Ethics in biomedicine and biotechnology
- Publication ethics
- Code of conductfor the recruitment of researchers

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Scientific integrity

Researchers, by the nature of their work, rely on reports from other researchers.

- Research ethics is about obtaining credible data and drawing the right conclusions.
- Individual research ethics includes:
  - scientific integrity,
  - collegiality,
  - protection of people involved in research,
  - care for experimental animals,
  - honesty in relation to institutions and
  - social responsibility

http://wiki.connect.znanost.org/index.php?title=Odgovorna_provedba_istrazivanja_i_znanstvena_cestitost

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Scientific integrity

•Scientific integrity is the condition resulting from adherence to professional values and practices when conducting, reporting, and applying the results of scientific activities

•Scientific integrity ensures objectivity, clarity, and reproducibility,

•Scientific integrity provides insulation from bias, fabrication, falsification, plagiarism, inappropriate influence, political interference, censorship, and inadequate procedural and information security.

•Avoiding of *scientific misconduct*.

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Responsible conduct of research

- For scientists:
  - Devotion to intelectual honesty and accountability
    - Is and aspect of moral importance and experience
- For institution:
  - Promotion and evaluation of standards of excellence, law and truth

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Research (scientific) misconduct

- a subset of compromised scientific integrity – is defined as:
  - **fabrication,**
  - **falsification,**
  - **or plagiarism**

  …in proposing, performing, or reviewing research, or in reporting research results.

  - Differences of opinion or apologetic misconceptions are not scientific misconduct.

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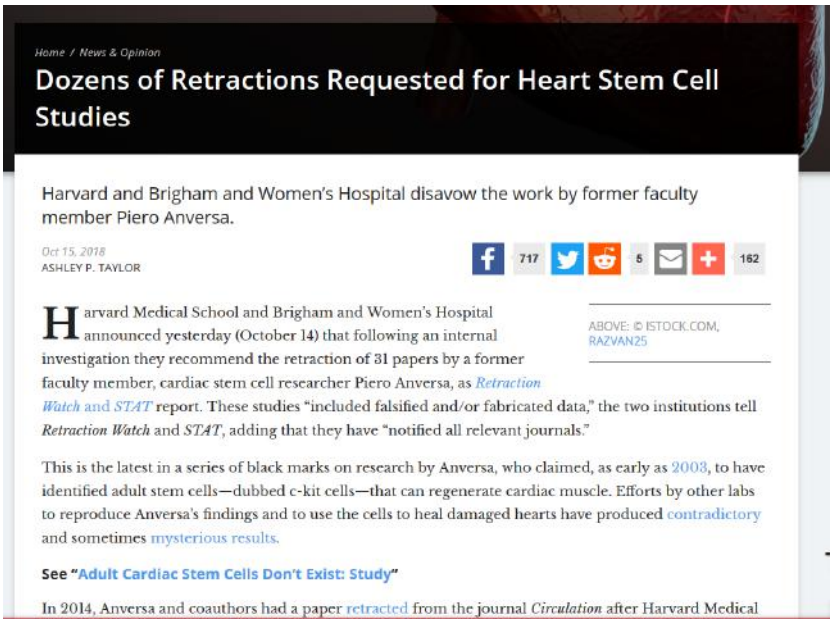
Fabrication



Home / News & Opinion

Dozens of Retractions Requested for Heart Stem Cell Studies

Harvard and Brigham and Women's Hospital disavow the work by former faculty member Piero Anversa.

Oct 15, 2018
ASHLEY P. TAYLOR

717 5 162

ABOVE: © ISTOCK.COM, RAZVAN25

Harvard Medical School and Brigham and Women's Hospital announced yesterday (October 14) that following an internal investigation they recommend the retraction of 31 papers by a former faculty member, cardiac stem cell researcher Piero Anversa, as *Retraction Watch* and *STAT* report. These studies "included falsified and/or fabricated data," the two institutions tell *Retraction Watch* and *STAT*, adding that they have "notified all relevant journals."

This is the latest in a series of black marks on research by Anversa, who claimed, as early as 2003, to have identified adult stem cells—dubbed c-kit cells—that can regenerate cardiac muscle. Efforts by other labs to reproduce Anversa's findings and to use the cells to heal damaged hearts have produced contradictory and sometimes mysterious results.

See "Adult Cardiac Stem Cells Don't Exist: Study"

In 2014, Anversa and coauthors had a paper retracted from the journal *Circulation* after Harvard Medical

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Office of Research Integrity

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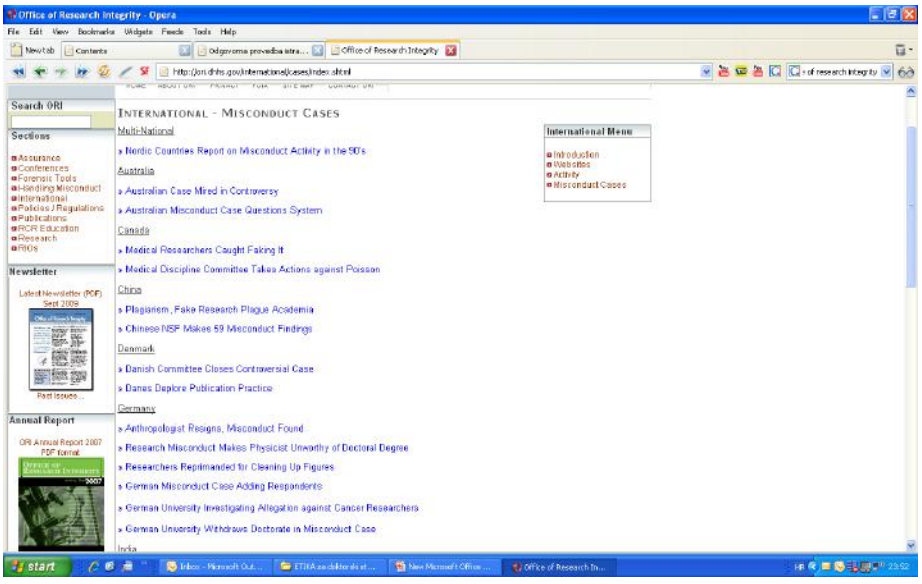
Examples of scientific misconduct



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https://euraxess.ec.europa.eu/euraxess/charter-code-researchers

- ***The European Charter for Researchers*** is a set of general principles and requirements which specifies *the roles, responsibilities and entitlements of researchers as well as of employers and/or funders of researchers;*

- ***The Code of Conduct for the recruitment of researchers*** consists of a set of general principles and requirements that should be followed by employers and/or funders *when appointing or recruiting researchers*. https://euraxess.ec.europa.eu/jobs/charter/code

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EU Charter for researchers

- https://euraxess.ec.europa.eu/jobs/charter/european-charterResearch Freedom
  - Researchers should focus their research for the good of mankind and for expanding the frontiers of scientific knowledge, while enjoying the freedom of thought and expression, and the freedom to identify methods by which problems are solved, according to recognized ethical principles and practices.

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Ethical principles

- Researchers should adhere to the recognised ethical practices and fundamental ethical principles appropriate to their discipline(s) as well as to ethical standards as documented in the different national, sectoral or institutional Codes of Ethics.

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Professional responsibility

- Researchers should make every effort to ensure that their research is relevant to society and does not duplicate research previously carried out elsewhere. They must avoid plagiarism of any kind and abide by the principle of intellectual property and joint data ownership in the case of research carried out in collaboration with a supervisor(s) and/or other researchers.

- Researchers should ensure, if any aspect of their work is delegated, that the person to whom it is delegated has the competence to carry it out.

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Professional attitude

- Researchers should be familiar with the strategic goals governing their research environment and funding mechanisms, and should seek all necessary approvals before starting their research or accessing the resources provided.
- They should inform their employers, funders or supervisor when their research project is delayed, redefined or completed, or give notice if it is to be terminated earlier or suspended for whatever reason.

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Accountability

- Researchers need to be aware that they are accountable towards their employers, funders or other related public or private bodies as well as, on more ethical grounds, towards society as a whole.
- In particular, researchers funded by public funds are also accountable for the efficient use of taxpayers' money.
- Consequently, they should adhere to the principles of sound, transparent and efficient financial management and cooperate with any authorised audits of their research, whether undertaken by their employers/funders or by ethics committees.
- Methods of collection and analysis, the outputs and, where applicable, details of the data should be open to internal and external scrutiny, whenever necessary and as requested by the appropriate authorities.

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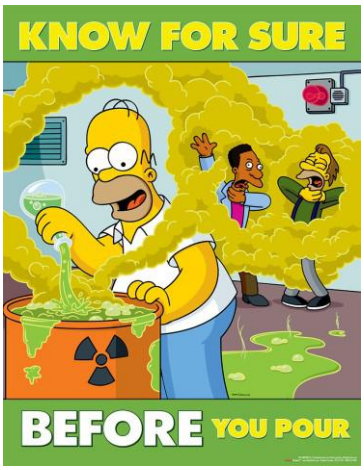
Good practice in research

- Researchers should at all times adopt safe working practices, line with national legislation, including taking the necessary precautions for health and safety and for recovery from information technology disasters, e.g. by preparing proper back-up strategies.
- They should also be familiar with the current national legal requirements regarding data protection and confidentiality protection requirements, and undertake the necessary steps to fulfil them at all times.



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Dissemination, exploitation of results

- All researchers should ensure that the results of their research are disseminated and exploited, e.g. communicated, transferred into other research settings or, if appropriate, commercialized.
- Senior researchers, in particular, are expected to take a lead in ensuring that research is fruitful and that results are either exploited commercially or made accessible to the public (or both) whenever the opportunity arises.

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Public engagement

- Researchers should ensure that their research activities are made known to society at large in such a way that they can be understood by non-specialists, thereby improving the public's understanding of science.
- Direct engagement with the public will help researchers to better understand public interest in priorities for science and technology and also the public's concerns.

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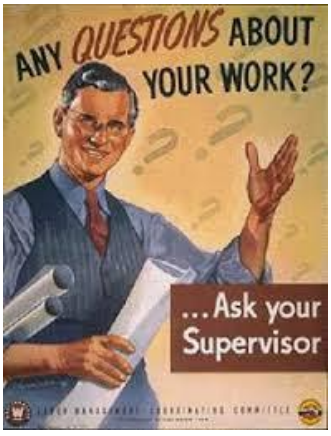
Relation with supervisors

- Researchers in their training phase should establish a structured and regular relationship with their supervisor(s) and faculty/departmental representative(s) so as to take full advantage of their relationship with them.
- This includes keeping records of all work progress and research findings, obtaining feedback by means of reports and seminars, applying such feedback and working in accordance with agreed schedules, milestones, deliverables and/or research outputs.



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Supervision and managerial duties

- Senior researchers should devote particular attention to their multi-faceted role as supervisors, mentors, career advisors, leaders, project coordinators, managers or science communicators.
- They should perform these tasks to the highest professional standards. With regard to their role as supervisors or mentors of researchers, senior researchers should build up a constructive and positive relationship with the early-stage researchers, in order to set the conditions for efficient transfer of knowledge and for the further successful development of the researchers' careers.

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Continuing Professional Development

- Researchers at all career stages should seek to continually improve themselves by regularly updating and expanding their skills and competencies.

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Intellectual Property Rights

- Employers and/or funders should ensure that researchers at all career stages reap the benefits of the exploitation (if any) of their R&D results through legal protection and, in particular, through appropriate protection of Intellectual Property Rights, including copyrights.
- Policies and practices should specify what rights belong to researchers and/or, where applicable, to their employers or other parties, including external commercial or industrial organizations, as possibly provided for under specific collaboration agreements or other types of agreement.

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Co-authorship

- Co-authorship should be viewe aluating staff, as evidence of a construc earch.
- Employers and/or funders sho ictices and procedures to provide researcl g of their research careers, with the nec they can enjoy the right to be recognize ontext of their actual contributions, as c to publish their own research results inde

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Expression of gratitude

- **<u>Aknowledgement</u>**
- Disclosures
- Sources of Funding

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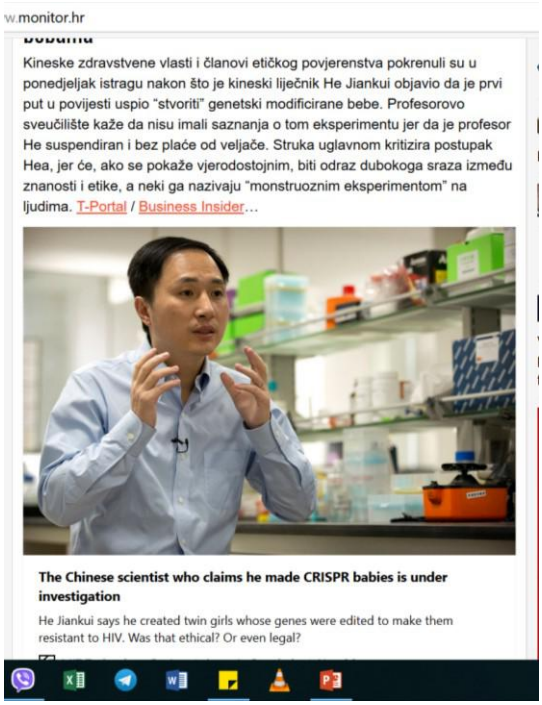
Ethics in medical research



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Declaration of Helsinki

- World Medical Association, 1964, revised 2013 (last official revision)
- Basic principles for all medical research
  - It is the duty of the physician to promote and safeguard the health, well-being and rights of patients, including those who are involved in medical research. The physician's knowledge and conscience are dedicated to the fulfilment of this duty.
  - The World Medical Association (WMA) has developed the Declaration of Helsinki as a statement of ethical principles for medical research involving human subjects, including research on identifiable human material and data.
- The Declaration of Geneva of the WM: "The health of my patient will be my first consideration,"
- The International Code of Medical Ethics:

  "A physician shall act only in the patient's interest when providing medical care which might have the effect of weakening the physical and mental condition of the patient."

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Croatia- Code of medical ethics and deontology

- Hrvatski liječnički zbor, 22.02.2002
- Article 6: biomedical research
  - When conducting research, a physician will hold on the rules of Helsinki declaration.

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Just because we can, should we?

Meet the doctor leading research on ethically fraught 'three-parent' babies

Ariana Cha | Washington Post | May 24, 2018

Fertility specialist John Zhang holds newborn "three parent" baby. Image credit: NEW HOPE FERTILITY CENTER

When future historians look back on the 21st century, one of the most iconic photos may be of a smiling, dark-haired man in blue scrubs protectively holding a newborn — the world's first commercially produced "three-parent" baby.

This is John Zhang, the Chinese-born, British-educated founder and medical director

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Ethics in biotechnology

https://www.slideshare.net/HudaNazeer/ethical-aspects-of-biotechnology?from_action=save

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Genetically Modified Foods

- About 75% of processed food produced in the US contain some GM ingredients.
- These foods include crackers, breakfast cereals and cooking oils.
- The most common GM foods are soy, cotton, canola, corn, sugar beets, Hawaiian papaya, alfalfa and squash.

https://www.slideshare.net/HudaNazeer/ethical-aspects-of-biotechnology?from_action=save

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Improvement of Crops

- Advances in biotechnology now allows the production of plants with novel traits such as longer shelf-life, increased nutrient content and drought resistance.
- The advent of GM crops provides new opportunities for increasing agricultural production and feeding the world.

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Potential benefits of GM foods

- Genetic engineering can be used to remove genes associated with allergies e.g. the gene that produces allergenic protein in peanuts can be blocked.
- The insertion of genes into crops such as rice and wheat and enhance their nutritional value e.g. Golden rice.
- Genetic modifications can be used to produce healthier foods e.g. by eliminating trans fats or caffeine.

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Potential benefits of GM foods

- Can be used to induce herbicide resistance leading to decrease use of herbicides
- Induction of insect and pest resistance → Decrease use of insecticides and pesticides
- Induction of abiotic stress resistance

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Ethical Aspects of GM Food

Unnaturalness
GM crops are associated with a sense of "unnaturalness". It is wrong in itself to alter the "essence" of species or to interfere with the natural order.

Environmental risks
Genes can flow from modified plants to wild plants leading to potential threat in biodiversity.

Health risk:
Because of the possible harmful health effects of GM foods, GM foods should be properly labelled to allow people to choose whether to consume of not to consume GM foods.

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Health risks associated with GM food

- Toxins and engineered genes associated with GM foods may enter the human circulatory system causing disruption in biological events
- GM foods may also be linked to gluten disorders
- A research carried out in 2012 showed that GM corn was linked to rat tumours
- GM foods may also be linked to human breast cancer cell growth, thyroid issues and infertility
- Glyphosate present in GM foods are known to cause malformations and birth defects at high doses
- Glyphosate is also linked to weight gain, depression and Alzheimer's disease

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Biotechnology and the Environment

- Agriculture and Environment - Closely related
- Modern Agricultural practices:

GM crops with insect, disease resistance	GM crops with improved nutritional traits	GM crops with drought and stress tolerance

- GM crops production - Beneficial to humans?
- Goals (Green Revolution):
  - Increase crop production,
  - Strengthen food security,
  - Decrease poverty and eradicate resulting infectious diseases.

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Biotechnology and the Environment

- Ethics with respect to the environment and biotechnology are:

Ecocentric	Biocentric	Anthropocentric
Study of an ecosystem with prevailing concerns	Ethics concerned with an individual organism	Ethic views engaged on Humans

- Concerns with respect to threats on environment and human health.
- Ethical issues w.r.t the act of modifying DNA.
- Ownership of biological innovations - Can humans own life?

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Publication ethics

- COPE: Committee on Publication Ethics
- http://www.publicationethics.org.nh
- www.cmj.hr

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- Guidance on authorship and non-author contributions should be strictly adhered to when publishing scientific research
- The role of a research institution in preserving research ethics is training, prescribing regulations, procedures, mechanisms for monitoring scientific research integrity
- MEFOS: Ethics Committee for Research
  - Code of Ethics for Teachers, Associates and Scientists of the Faculty of Medicine (Etički kodeks nastavnika, suradnika i znanstvenika Medicinskog fakulteta)
  - Rules of Procedure of the Ethics Committee (Poslovnik o radu Etičkog povjerenstva)

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International Committee of Medical Journal Editors - authorship criteria http://www.icmje.org/

- A Substantial contributions to the conception or design of the work; **or** the acquisition, analysis, **or** interpretation of data for the work; **AND**
- B Drafting the work **or** revising it critically for important intellectual content; **AND**
- C Final approval of the version to be published; **AND**
- D Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

- A + B + C + D = Authorship

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The Code of Conduct for the recruitment of researchers

- Recruitment
- Selection
- Transparency
- Judging merit
- Variations in the chronological order of CVs
- Recognition of mobility experience
- Recognition of qualifications
- Seniority
- Postdoctoral appointments

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- **Recruitment**
  - recruitment procedures should be open, efficient, transparent, supportive and internationally comparable, as well as tailored to the type of positions advertised.
  - not be so specialised as to discourage suitable applicants
  - a description of the working conditions and entitlements, including career development prospect
- **Selection**
  - Selection committees should bring together diverse expertise and competences and should have an adequate gender balance and, where appropriate and feasible, include members from different sectors (public and private) and disciplines, including from other countries and with relevant experience to assess the candidate.
  - Whenever possible, a wide range of selection practices should be used, such as external expert assessment and face-to-face interviews.
  - Members of selection panels should be adequately trained.

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- **Transparency**
  - Candidates should be informed, prior to the selection, about the recruitment process and the selection criteria, the number of available positions and the career development prospects.
  - They should also be informed after the selection process about the strengths **and weaknesses of their applications.**
- **Judging merit**
  - The selection process should take into consideration the whole range of experience of the candidates. While focusing on their overall potential as researchers, their creativity and level of independence should also be considered.
  - Consequently, the importance of bibliometric indices should be properly balanced within a wider range of evaluation criteria, such as teaching, supervision, teamwork, knowledge transfer, management of research and innovation and public awareness activities.
  - For candidates from an industrial background, particular attention should be paid to any contributions to patents, development or inventions.

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- **Variations in the chronological order of CVs**
  - Career breaks or variations in the chronological order of CVs should not be penalised, but regarded as an evolution of a career, and consequently, as a potentially valuable contribution to the professional development of researchers towards a multidimensional career track.

- **Recognition of mobility experience**
  - Any mobility experience, e.g. a stay in another country/region or in another research setting (public or private) or a change from one discipline or sector to another, whether as part of the initial research training or at a later stage of the research career, or virtual mobility experience, should be considered as a valuable contribution to the professional development of a researcher.

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- **Recognition of qualifications**
  - Employers should provide appropriate assessment and evaluation of the academic and professional qualifications, including nonformal qualifications, of all researchers, in particular within the context of international and professional mobility
- **Seniority**
  - the levels of qualifications required should be in line with the needs of the position and not be set as a barrier to entry.
  - Recognition and evaluation of qualifications should focus on judging the achievements of the person
  - the pattern of lifelong professional development should also be recognised.
- **Postdoctoral appointments**
  - Clear rules and explicit guidelines, including the maximum duration and the objectives of such appointments, should be established by the institutions appointing.
  - the postdoctoral status should be transitional, with the primary purpose of providing additional professional development opportunities for a research career in the context of longterm career prospects.

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Good luck!

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