

## Concept Note

### Workshop on Research Ethics and Integrity

9 December 2022

#### Introduction

This workshop is the second in a series of workshops organised by the European Commission, together with EU Member States and a number of key partner countries as part of a multilateral dialogue on principles and values for international research and innovation. The aim of this dialogue is to have an open discussion to develop a common understanding of these principles and values as a reliable basis for international research and innovation cooperation.

This second workshop focuses on research ethics and integrity. As research ethics and integrity are the backbones of excellence and trust, issues such as the responsible conduct of research, the accuracy and reliability of data, the protection of privacy as well as of other fundamental ethical principles gradually become an essential part of the international policy debate on responsible research.

Upholding the validity of scientific research is critical in gaining the public's trust of research and its confidence in the assumptions, methods and findings of the research process itself. It is also important for researchers to be able to trust and build on the work of others: a trustworthy knowledge base could lead to socio-economic development and advancement as well as to the improvement of living standards, health and wellbeing of citizens.

Numerous initiatives worldwide highlight the key role of research ethics and integrity as an essential pillar of all efforts to ensure the high quality of science as a prerequisite for achieving excellence in research and innovation.

Given the multiplication of these initiatives at the international/local/national levels, policymakers along with research-funders, researchers and citizen communities, more than ever before, need to work hand-by-hand to shape a culture of ethically sound research in which responsible behaviour is the norm at individual and institutional levels.

Current efforts on safeguarding equity, justice and fairness in research should be guided by, for example, the Global Code of Conduct for Research in Resource-Poor Settings. The Code has been adopted this year as a reference document for all NATURE Publishing Journals. A hands-on example of how the principles of the Global Code can be applied to practicing research is the development of the San Code of Research Ethics, developed by the San Indigenous people in southern Africa. The 'G7 Common Values and Principles on Research Security and Research Integrity' also emphasize equity and diversity in the research ecosystem.

At the same time, the emergence of disruptive technologies such as artificial intelligence and gene editing raise novel challenges for traditional research ethics reviews and efforts to promote research integrity and minimize misconduct. These challenges appear to question, for example, the ability of the long-established ethics review structures to ensure the embedment of human rights in the development of digital technologies and to protect 'digital rights' and 'digital principles' in the context of international research.

Therefore, there is an increasing need to limit ethics dumping and strengthen responsible conduct of research and research cooperation based on equitable partnership frameworks. Promoting a continuous involvement of ethics expertise, capacity building, community participation and advice in the various stages of the research endeavour from idea to product to application that could prevent developing countries from simply becoming testing hubs for research protocols is of outmost policy importance.

Towards this direction, we need to find new ways to embed not only a human-centric approach to the research design of transformative technologies but also to put diversity, mutual trust and respect and inclusivity at the centre of a new model of fair research partnerships. The forthcoming adoption of the Cape Town Statement on Fostering Research Integrity is expected to pave the way for strengthening the accountability and fairness of our global research structures and practices. The role of Open Science and its efforts to promote and facilitate scholarly research that is collaborative, transparent and reproducible where outputs are publicly available as well as the need for adhering to FAIR data principles as a means to enhance integrity will be discussed in detail in the frame of an Open Science dedicated workshop of this dialogue in 2023.

## **Background**

Research ethics and integrity are promoted primarily at the institutional and national levels. In recent years, the ALLEA European Code of Conduct for Research Integrity, the Cape Town Statement on Research Integrity (in development), the Montreal Statement on Research Integrity in Cross-Boundary Research Collaborations, the Global Code of Conduct for Research in Resource-Poor Settings, the G7 Research Security and Research Integrity Values/Principles as well as an increasing number of AI Ethics codes and frameworks have set a solid basis for an insightful international dialogue and a nuanced multi-country policy reflection in this important field of research governance. Compliance with research ethics norms has become a legal prerequisite for receiving funding in several jurisdictions and as such anchored in EU and international law.

Several dimensions of research ethics such as privacy, data protection and the involvement of human volunteers in medical protocols but also non-medical research, have been deeply embedded in legal frameworks, codes, and practices of many countries. However, in addition to lack of expertise, several countries do not have the institutional capacity and resources to implement the relevant ethics and research integrity-norms in a consistent matter. Therefore, beyond the need for a degree of normative convergence, issues such as capacity building, benefit-sharing, and a multi-value research ethics approach to the responsible and ethical governance of research constitute important policy challenges.

## Goal of the workshop

The aim of this workshop would be to enhance collaboration in research ethics and integrity based on existing international actions (for example the World Conference on research Integrity and the Global Conference of Bioethics Councils) and to promote a lively public debate on how disruptive technologies such as AI, quantum technologies, neurobiotechnologies) could be governed in ethical terms. This will include discussing and sharing experiences on the implementation challenges, exchanging views on needs and priorities, addressing capacity building, and benefit sharing and identifying and agreeing on good practice and the sound governance of research on an equity and justice foundation.

This workshop will take stock of and build on existing international documents and best practices in relation to the main principles and values of research ethics and integrity internationally. The workshop will consider and build upon the continuing ethics and integrity discussions at both national and international levels. This will also serve as a platform for an exchange of views and best practices among all major stakeholders when promoting responsible research practices and safeguarding trust in research.

The workshop's approach could provide a solid basis for the practical support of the research community across different scientific disciplines and fields and become valuable tool for the translation of principles of good research into practice. It aims to be a dynamic dialogue for participants to openly discuss, to share experiences and best practices, and to put forward recommendations to address challenges and opportunities.

Therefore, it is proposed that this structured workshop focuses on the following tangible aspects of research ethics and integrity **each of which will be discussed in a specific breakout session of the workshop.**

***Focus area 1) Promoting research integrity and researchers' institutional responsibility;*** (discussion on common challenges and solutions/best practices to promote research integrity and minimise research misconduct and development of appropriate channels for the examination of alleged misconduct and breaches of research integrity in international partnerships).

Questions for debate:

- What are the prerequisites/requirements/incentives a research funding framework should introduce for researchers to adhere to with research integrity norms?
- How can the research assessment and research funding systems be set-up to safeguard research integrity at times of high academic pressure?
- How can we create better conditions for researchers to develop an active commitment to transparency, trust and open science?
- How can we help to strengthen trust in science and promote positive incentives, spreading research integrity culture among stakeholders?

***Focus area 2) Research ethics in the domain of emerging tech (AI, quantum technologies, gene editing, augmented reality)*** (discussion on the challenges that artificial intelligence (AI) places on traditional ethics review structures and Policy reflections on what policy-makers can do to help researchers collaborating

internationally, to navigate different frameworks and approaches without resorting to ‘ethics dumping’ practices).

Questions for debate:

- Do we need new tools such as new forms of informed consent and privacy safeguards in view of the disruptive character of emerging technologies? How can technology help?
- Are the multiple AI Ethics initiatives inclusive and reflective enough to accommodate the concerns of the Global South and of underrepresented population groups/minorities?
- How can we ensure adherence to open science and FAIR data principles in the domain of emerging technologies?
- How can we support researchers when addressing ethical challenges in the field of AI as well as when working in open-science cloud services?

***Focus area 3) The future of ethics and integrity reviews in an ever-changing research landscape***

**Shaping the future of ethics reviews in an ever-changing research landscape and creating an open line of communication in addressing challenges before they become “endemic”** (recommendations for a common basis for the respect of principles and values and the establishment of a level playing field in the domain of ethics and integrity and recommendations for education/continuous training/support to ethics and research integrity organisations).

Questions for debate:

- How can we achieve inter-institutional, inter-disciplinary and international collaboration when governing and assessing research from an ethical and research integrity perspective given that the transnational and disruptive character of the ever-growing ethical risks?
- How can we achieve a smooth transition from an ethics of protection of research subjects to an ethics of empowerment of the “citizen scientists”, which may disagree with the researcher’s point of view?
- Is the traditional ex-ante-model of research integrity and ethics oversight sufficient to deal with new challenges in this domain of research? Do we need to enhance sustainable and life-long education/continuous training in all stages of the research careers and stimulate processes and structures that support research integrity and ethics?
- How can we create better conditions for research integrity and ethics committees to benefit from best practices and facilitate their work especially in countries with weak institutional structures?

**Further reading:**

- [The European Code of Conduct for Research Integrity, ALLEA](#)
- [Declaration of Helsinki](#)
- [Ethics guidelines for trustworthy AI, Independent High Level Expert Group on AI, European Commission](#)
- [Statement of Principles and Practices for Research Ethics, Integrity, and Culture in the Context of Rapid-Results Research, Global Research Council \(2022\)](#)
- [Statement of Principles for Research Integrity, Global Research Council \(2013\)](#)
- [Assessment List for Trustworthy Artificial Intelligence \(ALTAI\) for self-assessment, Independent High Level Expert Group on AI, European Commission](#)
- [Guidelines on ethics by design/operational use for Artificial Intelligence](#)
- [Council Conclusions on Research Integrity, \(adopted on 01/12/2015\) Council of the European Union](#)
- [Council conclusions on “Principles and values for international cooperation in research and innovation” \(10/6/2022\), Council of the European Union](#)
- [Global Code of Conduct for Research in Resource-Poor Settings/San Code of Research Ethics](#)
- [G7 Research Security and Research Integrity Values/Principles.](#)

## Summary Report

### Workshop on Research Ethics and Integrity

9 December 2022

The Workshop on Research Ethics and Integrity took place on 9 December 2022 as the second of ten virtual workshops in a series on scientific and academic freedom, supporting the European Commission's Multilateral Dialogue on Values and Principles for Research and Innovation. The 2.5-hour event attracted around 180 participants from around 50 countries.

Researchers need the trust of the public and of other researchers for their work to be effective in creating prosperity, health and wellbeing. There is no shortage of initiatives promoting research ethics and integrity; challenges include embedding these principles in researchers' everyday thinking, meeting the needs of developing countries, and addressing disruptive new technologies.

The delegates spent 90 minutes discussing three key issues:

1. Research integrity and the responsibilities of researchers and institutions.
2. Research ethics in the domain of emerging tech (AI, quantum technologies, gene editing, augmented reality).
3. The future of ethics and integrity reviews in an ever-changing research landscape.

They worked in nine parallel breakout sessions – three groups for each of the above topics – following the Chatham House Rule to encourage open discussion.

#### **Research integrity and the responsibilities of researchers and institutions**

- quality and integrity help scientists gain trust and ultimately make research easier;
- grants should reward honest and transparent research; irresponsible research should face sanctions;
- institutional culture needs to move from top-down towards bottom-up;
- researchers working under pressure need clear guidelines and standard operating procedures;
- responsibility should be shared, with individuals and groups of researchers supported at all times;
- training for researchers in ethics and integrity should be mandatory;
- research results should feed back to the communities who have helped to make it possible;
- open science increases our responsibility to educate the public about how to recognise good science;
- open science brings extra risks in terms of security.

#### **Research ethics in the domain of emerging technology**

- people who deal with the ethics of technology need to understand the technology;
- we need to develop new tools, and tune existing tools to address the new risks;
- to maximise benefits to society, we need ways to re-use research data;
- but the current system of informed consent is clunky, so we may need something better;
- most existing processes and guidance ignore the specific concerns of the global South and minorities;
- it is hard to eliminate cultural bias from AI datasets;

- open science involves a tradeoff between scientific freedom and responsible use of new technologies;
- there is a tradeoff between top-down (funders and politicians) and bottom-up (the people affected);
- medical science may have already solved some issues of openness relevant to AI.

### **Ethics and integrity reviews in a changing research landscape**

- education, education, education – and resources;
- policies on ethics and integrity can't be dictated from the top, but must reflect societal groups;
- institutions, disciplines and countries need to cooperate, while recognising differences;
- researchers don't always get the support they need from their institutions;
- ethics and integrity are important for non-human species and the environment too;
- education in science ethics starts in school and applies to everyone, not just specialist reviewers;
- citizen scientists are part of the system, not its enemies;
- protection and empowerment are both important, and new ethical frameworks should recognise this.

The next workshop, on gender equality and inclusiveness, will take place in mid-February 2023.

# **Final Report**

## **Workshop on Research Ethics and Integrity**

**9 December 2022**

### **Introduction**

This workshop was the second in a series of workshops organised by the European Commission, together with EU Member States, Horizon Europe associated countries, the international partner countries with which the EU has an S&T Agreement, and key European stakeholder organisations, as part of a multilateral dialogue on principles and values for international research and innovation. The aim of this dialogue is to have an open discussion to develop a common understanding of these principles and values as a reliable basis for international research and innovation cooperation. This workshop was organised by South Africa in conjunction with Switzerland, Canada, Mexico, Morocco, Chile and the European Commission.

This second workshop focused on research ethics and integrity issues and the notions of trustworthy scientific knowledge and human-centric technologies as developed around the world and across different disciplines. The event welcomed over 167 participants, from 40 countries, including public sector attendees, academics, civil society representatives, representatives from the Organisation for Economic Co-operation and Development (OECD), the United Nations Educational, Scientific and Cultural Organisation (UNESCO), the International Science Council, and journalists. They engaged in an inclusive, cross-disciplinary and interactive debate on the research integrity and ethics challenges that researchers are currently facing and their impact on the entire research and innovation process.

The aim of this workshop was to enhance collaboration in research ethics and integrity based on existing international actions (for example the World Conference on Research Integrity and the Global Conference of Bioethics Councils) and to promote a lively public debate on how disruptive technologies such as AI, quantum technologies, neuro-biotechnologies) could be governed in ethical terms. This included discussing and sharing experiences on the implementation challenges, exchanging views on needs and priorities, addressing capacity building, and benefit sharing and identifying and agreeing what constitutes ethically sound and just governance of research and responsible innovation.

This workshop took stock of, and built on, existing international documents and best practices in relation to the main principles and values of research ethics and integrity internationally. The participants considered the ongoing ethics and integrity discussions at both national and international levels and acknowledged that the research landscape increasingly becomes ever more fragmented and characterised by an increasing division of labour, multi-country partnerships and geared towards the development of transformative technological tools. Against this background, the event set the foundations for shaping a global conversation about sustainable approaches to developing and deploying digital technologies in a responsible way and embedding a research integrity culture across the entire research and innovation ecosystem.

The workshop provided a solid basis for the practical support of the research community across different scientific disciplines and fields and for discussing the need for inclusive and effective tools for the translation of principles of good research into practice. It served as a platform for an exchange of views and best practices



among all major stakeholders when promoting responsible research practices and safeguarding trust in research and to put forward recommendations to address challenges and opportunities. The participants discussed the fact that research **ethics and integrity are central to both excellence and trust in science**. Therefore, issues such as the responsible conduct of research, including the accuracy and reliability of data, the protection of privacy and dignity, as well as of other fundamental ethical principles, should further become embedded into the International research ecosystem.

## Structure

The workshop was structured along the following focus areas:

***Focus area 1) Promoting research integrity and researchers' institutional responsibility;*** (discussion on common challenges and solutions/best practices to promote research integrity and minimise research misconduct and development of appropriate channels for the examination of alleged misconduct and breaches of research integrity in international partnerships).

***Focus area 2) Research ethics in the domain of emerging tech (AI, quantum technologies, gene editing, augmented reality)*** (discussion on the challenges that artificial intelligence (AI) places on traditional ethics review structures and Policy reflections on what policy-makers can do to help researchers collaborating internationally, to navigate different frameworks and approaches without resorting to 'ethics dumping' practices).

***Focus area 3) The future of ethics and integrity reviews in an ever-changing research landscape***

**Shaping the future of ethics reviews in an ever-changing research landscape and creating an open line of communication in addressing challenges before they become "endemic"** (recommendations for a common basis for the respect of principles and values and the establishment of a level playing field in the domain of ethics and integrity and recommendations for education/continuous training/support to ethics and research integrity organisations).

## Opening and welcome

**In her opening remarks, Cristina Russo, Director, Global Approach & International Cooperation at DG Research and Innovation, European Commission** welcomed the participants and recalled that this meeting brings together the EU's key international partner countries, stakeholder organisations, international organisations including UNESCO, the OECD, the International Science Council and representatives from the EU Member States and countries associated to the Framework Programme.

She highlighted that it is increasingly understood around the world that **the basic principles and fundamental values which apply to scientific research in a national setting are of equal relevance to international collaborative research and innovation activities**, that is to research and innovation activities carried out jointly by partners from different countries or regions of the globe.

**Further, she emphasized the special role of ethics and integrity of scientific research in promoting and protecting fundamental values and ethical principles that include privacy, dignity autonomy and**

**safeguarding that research work is performed** in solidarity and partnership with the Global South. She recalled that **the purpose of the multilateral dialogue is to interactively engage in open discussions, to agree on common terminologies, to share experiences and to identify ‘good practices’ for the benefit of all research stakeholders.**

Daan du Toit, Deputy Director-General for International Cooperation and Resources in the South African Department of Science and Innovation offered a scene-setting presentation on the governance of research in South Africa. He highlighted the main tenets of **the South African Statement on Ethical Research and Scholarly Publishing Practices and of the Statement of Principles for Research Integrity** as adopted by the Global Research Council and set out the strategic importance of unleashing the potential of open science and citizen science in promoting research integrity in South Africa. He finally presented the work of the Africa Open Science Platform (AOSP).

Martin Penny, Head of Unit, Directorate for Global Approach & International Cooperation in Research and Innovation, European Commission and Mihalis Kritikos, Policy Adviser, Ethics and Research Integrity Sector, European Commission introduced the objectives of the workshop and explained its rationale, structure and association with EU’s policy goals and vision in this area.

Dr Kritikos also analysed the special role and the unique challenges that the Research Ethics and Integrity Sector of the European Commission are facing when reviewing research protocols at the transnational level that raise complex ethical questions and the different tools that this Commission service has developed to guide researchers and safeguard their compliance with the relevant ethical principles and legal standards. He highlighted **the special role that the service is placing on the international dimension of the ethical challenges and the coordinated governance of the latter.** The various EU initiatives for the promotion and safeguarding of research integrity were presented with particular emphasis on the upcoming plans and initiatives to enhance the ongoing global dialogue on the responsible design and deployment of new and emerging technologies.

## Parallel break-out sessions on focus areas

### 1) Promoting Research integrity and researchers'/institutional responsibility

**How can the research assessment and research funding systems be set-up to safeguard research integrity at times of high academic pressure? How can we create better conditions for researchers to develop an active commitment to transparency, trust and open science? How can we help to strengthen trust in science and promote positive incentives, spreading research integrity culture among stakeholders?**

These were some of the main questions raised during this session. The discussion focused on the need for research funders to find new ways to **incentivize good scientific practice** and to encourage researchers and the research community to embrace high ethical standards so that responsible science becomes a norm. During the session, it became evident that the **promotion of good scientific practices and the drafting of codes of conduct to foster commitment** from both institutions and individual researchers need to be prioritized in institutional and policy terms when applying for funding to ensure research integrity and good research behaviour. **There is also a need to balance the researcher's individual interests with community values.** The funding framework must create the space for benefit sharing to avoid 'helicopter research' that is field research in poorer countries that extracts data or other research material without respectful collaboration. The research funding framework should provide support, combat indifference, foster leadership, encourage disclosure of critical information, and a new type of research culture that promotes a co-design approach to international research.

The participants proposed the following actions that could ensure that all researchers, academic/research institutions and funders become **aware of the ethical challenges** and the best practices and tools needed to manage them in an efficient manner:

#### Training Actions

Many participants placed particular emphasis on the **special responsibility of research institutions** to train all partners involved in the context of research projects (i.e., not only train internal staff and students at the institutions). Training actions should focus on the promotion of **integrity and its visibility that would encourage researchers to be responsible researchers. Training and education on research integrity matters should not only be strengthened but also focus on analyzing concrete examples of unacceptable behaviour,** and the consequences for the researcher, the institution, and society as well as on promoting best practices. It was agreed that training programmes should **acknowledge and emphasize the responsibilities and virtues of the researcher and encourage researchers to practice precaution, prevention & due diligence and to understand their role.** The participants emphasized that training should focus on **confidence building** to recognise potentially dangerous situations and to act on them.

In fact, it was proposed that funding organisations **should render the training of researchers on conducting responsible, ethical research** a minimum legal requirement for supporting the research project as it already happens in certain countries. Training actions should include **identification and exchange of** good practices, co-sharing of experiences (narratives), co-learning and contextualizing the principles in the form of team

workshops and training networks of educators. **The discussants also proposed the shaping of a research integrity by design culture.** Such an approach would require not only **appropriate training** on the regulatory and policy framework on research integrity but also the development of special certification schemes and of positive incentives. Some universities usually **require training certificates on research ethics on research and ethics.** Proposals cannot be accepted without such certification.

### **Actions on responsibility issues**

**Furthermore, the issue of responsibility came forward in the case of research misconduct and the importance of emphasizing researchers' duty to conduct trustworthy research.** On the issue of responsibility when breaching research integrity norms, **most discussants agreed that researchers should not be entirely responsible as they conduct research on behalf of institutions.** Within this frame, discussants agreed on the need to shift from individual to institutional responsibility schemes. The latter would foster accountability that would ease the pressure off the researcher. Introducing **shared responsibility appears to be the most appropriate framework to ensure infrastructure a fair allocation of duties when performing research.**

It is **important to be clear about the allocation of responsibilities and what responsibilities entail,** and provide institutional support to researchers and research institutions to meet all the relevant responsibility requirements. It was also recommended that a **broad definition of research integrity** is adopted as an essential part of the efforts to build a responsible research framework. Training researchers on research integrity issues and empowering the mentor-mentee relationship should be seen as part of this responsibility.

In addition, the participants **acknowledged the complexity of the global research enterprise** and the need for legislators and funding agencies to take note of this complexity **when designing liability frameworks** on research integrity matters. The discussion highlighted the need for designing special liability schemes that will allocate responsibility among the various actors of the research ecosystem but also place particular emphasis on the special responsibilities of researchers and funders.

### **Governance initiatives**

**The participants debated the need to create comprehensive frameworks on integrity and ethics at the international level in the forms of treaties, codes and declarations following the example of regional international organisations such as the EU.** That would provide a point of reference worldwide and serve as a model for national and local initiatives of this kind. Such efforts should take into account local norms in the domain of research and accommodate the plurality of national policies and institutional practices.

The proposed governance initiatives could include **new instruments to reward good research integrity practices** and standard operating procedures especially for international collaborative research projects. People and institutions do not want to confront unethical cases until there is a case, and these are usually addressed 'behind the scenes.'

**Researchers should also be provided with means to blow the whistle on cases of breaches of research integrity norms.** Many funders have started requiring ethics statements/reviews/approvals also in non-medical research areas, which can better adhere/support research integrity. These need to be customized to

the specificities of each and every research field. To uphold the research integrity norms, **funding guidelines also need to be developed that align to social values and benefits to community.**

### **Actions to modify the current research assessment frameworks**

The discussion also focused on how research assessment systems should be redesigned in order to safeguard research integrity especially at times of high academic pressure. Due to systemic academic pressure and high workload, most researchers do not seem willing to put more emphasis on, and dedicate resources for the management of the ethical aspects of research. Funding systems need to appreciate the pressures of **life-work balance** and to provide researchers with the opportunity to work on the ethical aspects of the research without time restrictions. **The suitability of the dominant quantitative approach for social sciences and humanities was questioned.** Many participants raised the need for these disciplines **to develop an alternative research assessment** framework and limit the number of publications allowed in a CV. Within this frame, there is a need to develop a **behavioural competency framework** that would depart from the **publish or perish approach** and ensure that research staff is evaluated against a set of criteria that promote a research culture that recognises interdisciplinary collaboration, openness, and engagement with society. That would allow researchers to focus more on the qualitative aspects of their research, its potential social impact and on its ethical components.

These can take the form of new **research assessment frameworks that focus on quality and not quantity and introduce the respective rewards.** The example of the South African National Research Foundation (NRF) ratings was brought up as a model of formulating an assessment framework that does not promote the 'publish or perish' narrative. The proposed **accountability framework and positive incentives** that respect the variety of scientific disciplines and value the engagement and collaboration with societal actors could encourage researchers and students to adhere to research integrity and good scientific practices.

**The participants acknowledged the need to approach research integrity as an indispensable research funding condition and a research assessment criterion.** The discussants also agreed that the revamped research assessment criteria could place particular emphasis on research integrity that could be encouraged via the development of positive measures that value methodological rigour to guard against sources of bias, reward extended forms of scientific integrity, promote compliance with best practices in the sharing of research data and results and the ethically sound performance of research.

### **Public outreach (Science and Society) initiatives**

**Researchers are often not sure what is expected from them and have little understanding of the effects of their research on society.** The participants raised the need to involve the scientific community into the process of developing research ethics guidelines for two reasons: to expose scientists to ethical questions and challenges that may in effect educate them about the ethical dimensions and impact of their work, and at the same time to help the members of ethics review panels to understand the scientific dimension and methodological aspects of research protocols in the domain of highly complex technologies. The integration of scientific experts into the ethical assessment process should also be seen as part of the efforts **to increase ethical awareness among scientists.**

**Moreover**, the discussants agreed on the necessity to consider meaningful public engagement as a means to improve the openness of the ethics and integrity review procedures. **Creating sufficient public space within academic institutions and research funding schemes is necessary to encourage researchers and students to exchange knowledge and learn good ethical practices from each other.** Further, there is a need to develop creative tools **to shape researchers' expectations for ethical behaviour among research institutions.** The discussants acknowledged that ethical advice especially in the domain of AI has proven a very challenging process as, often, the required technical know-how is not available in evaluation panels, most of the ethical challenges are not apparent at the outset of the scientific process, and the legal landscape is still unclear.

The participants brought forward the requirement for researchers to be transparent with regard to the scientific design and the terms of the implementation of research project under their supervision, and engage with the whole society to build trust. **There is a need for key stakeholders not to work in silos, support coordinated efforts to build trust, respect research culture and facilitate sharing and access to scientific data.** Whether the research is following open science rules or not, it should follow the integrity rules as shaped at the local and/or national levels. Researchers and ethics panels should also reflect on **the need for opening the debate about the role of AI not only in promoting research integrity but also in potentially threatening the trust-worthiness that the process of generating knowledge relies on.** Last but not least, certain participants brought forward the role of academic journals and how even small journals (hosted by, e.g., Web of Science, SCOPUS), are nowadays developing **clear policies on research integrity and ethics matters.**

## **2) Research ethics in the domain of emerging tech (AI, quantum technologies, gene editing, augmented reality)**

### ***Main challenges and need for inclusivity and a revamped informed consent instrument***

Do we need new tools such as new forms of informed consent and privacy safeguards in view of the disruptive character of emerging technologies? How can technology help? Which forms of consent are needed to keep up with the technological management? How do we perform technology management of privacy?

These were some of the questions that were discussed during this session. It was agreed that the generic, conventional, static rather narrow type of consent where patients or healthy volunteers provide prior consent in the context of medical research does not seem to cope well with the sui generis challenges of digital technologies.

**The way/form of informed consent is understood and operationalized** is not anymore helpful to understand and use in a meaningful way in the frame for example of big data research. **The participants debated that seeking for a meaningful informed consent in the field of AI and developing a uniform informed consent model in this domain** is neither appropriate nor feasible. A revamped informed consent process that will depart from the traditional bioethics model containing new questions as part of **a tailored ethical evaluation** was suggested. This approach was suggested as the best possible course of action that could be shaped in accordance with the objectives and methodologies of the proposed study as well as to the dynamic character of these technologies.

**Informed consent needs to be remodeled and inspired by new ethical guidelines in view of the potential of technologies such as virtual reality and brain machine interfaces to manipulate participants' consent.** Given the transformative character of this technology, a more dynamic, flexible shaping of the concept that could look at ethical questions that go beyond privacy and could pay particular attention to re-consenting is necessary. Given that AI is a game changer, researchers are in need of new ethical reflection tools that would view **research integrity and research ethics as a design principle in every research domain and not a detached discipline. Funders need to develop new guidance tools in the ethical governance of disruptive technologies that could guide researchers and reviewers in this uncharted technological territory. Such guidance tools should be approached as 'living documents'.** Technologies in the form of **privacy-enhancing technologies** and **evaluation tools could also be developed to help researchers report on the ethical dimensions/effects of their research and to** empower research participants as data providers/owners. Technologies of this kind could strengthen the social plausibility of new and emerging technologies. The main aim is a fair and sound use of AI and the development of sustainable solutions to ensure compliance with the FAIR data principles.

**It was also agreed that education and continuous training of researchers, of research participants and of ethics review panel experts are crucial to understand the challenges associated with the design and deployment of emerging technologies and to adjust the traditional ethics instruments to the specificities and ethical modalities of digital technologies.** Researchers should be supported through creative ethical reflection and citizen science toolboxes whereas funding agencies should work together with applicants and beneficiaries and guide them on questions of social justice and impact, societal engagement, and the terms of interface between science and society.

The main aim is for the researchers to become familiar with the possible effects of their research from an ethical perspective **during the whole research lifecycle starting from the technical design and research conception stages. Particular attention should be paid to** the education and training of for the members of research ethics and integrity committees that are reviewing research protocols of this kind. Being exposed to a variety of new ethical challenges and being constantly asked to address new risks in a constantly changing environment, there is an imminent need to strengthen the capacities and resources of these ethics panels and support their work when reviewing AI-related protocols.

**The session also focused on the mushrooming of AI Ethics guidelines and principles worldwide.** The participants questioned their inclusive and reflective character and their capacity to accommodate the entirety of concerns of the Global South and of underrepresented population groups/minorities. Over 58% of the initiatives adopted in the domain of AI ethics are from Europe and North America and only 1.4% of them are from Africa. It was agreed that the political and institutional capture of these initiatives by the Global North could be also reversed by initiatives taken at the UN level. Some participants also highlighted the risks of performing research on digital technologies in what they described as **'second colonization of the South through novel technologies.'**

Towards this direction, the existing ethics review structures should safeguard that **knowledge produced in the Global South in the frame of international research projects on digital technologies remains in the developing countries involved and any potential injustice is addressed in a drastic manner. The discussion indicated that benefit sharing and capacity-building actions are also very important. There is a need to** generate locally useful and valuable knowledge which could be translated into the improvement of local

conditions and enhance digital literacy and technological understandability. Many discussants that this is a structural challenge that has political foundations. Therefore, it cannot be resolved via technical tools only. Participants emphasized the need for the ethical governance structures to avoid following the same practices that were established in the domain of international biomedical research.

### 3) The future of ethics and integrity reviews in an ever-changing research landscape

How can we achieve inter-institutional, inter-disciplinary and international collaboration when governing and assessing research from an ethical and research integrity perspective given the transnational and disruptive character of the ever-growing ethical risks? How can we achieve a smooth transition from an ethics of protection of research subjects to an ethics of empowerment of the “citizen scientists”, which may disagree with the researcher’s point of view? Is the traditional ex-ante-model of research integrity and ethics oversight sufficient to deal with new challenges in this domain of research? How can we create better conditions for research integrity and ethics committees to benefit from best practices and facilitate their work especially in countries with weak institutional structures?

**These were some of the questions discussed in this session.** The discussants welcomed the idea of an international approach and coordination on research ethics from a governance perspective given the transnational character of the technology-oriented ethical risks and the gradual acknowledgment of the commonality of some of the challenges faced by research communities and ethics committee structures worldwide. Developing an international procedural and governance framework on these issues constitutes a herculean task as the challenges are several: lack of interdisciplinary standards, rapid pace of technological developments, uneven ethical review capacities and an ever-growing number of ethics initiatives and conceptualisations of research integrity among various countries and disciplines.

Regarding the capacity of institutions, it was agreed that a vast range of academic and research institutions either have less awareness in addressing concerns in a systematic and consistent way or lack the necessary infrastructure to address major ethical challenges in a comprehensive manner. It was proposed that local research infrastructures should be strengthened from an ethics governance perspective via sustainable capacity-building initiatives.

Additionally, many participants reported that in certain countries, researchers tend to stick to disciplinary rules rather than to international norms. However, in certain disciplines such as social sciences and humanities, there is still low awareness about the need to draft data management plans and/or seek ethical approval for research projects that involve humans and human data. The participants highlighted that ethical mindfulness among researchers and research communities is slowly growing though in non-medical domains as research funders and journals are increasingly asking for evidence of ethical awareness.

Many discussants stressed that it is important to be aware also of **disciplinary differences from an ethical perspective** especially when it comes to the ethical management of interdisciplinary projects. That is needed given that new and emerging technologies are primarily based and shaped on **interdisciplinary methodologies that are developed by diverse groups of researchers**. Bringing aboard faculty members with many different



experiences and expert profiles would be of added value. Research integrity and research ethics could also be streamlined and embedded into interdisciplinary training programmes for students and researchers.

One way to increase the policy relevance and uptake of this interdisciplinary approach to research ethics and of ethics training programmes is to render research integrity a means to achieve the sustainable development goals and an essential requirement before/when receiving research funding. The ethical rules and the ethics review framework as shaped at the EU level **could for instance be usefully applied by all funding organisations.**

Due to the fact that institutions are setting up their own ethical committees, overshadowing **national ethics structures** many participants brought up that universities and research performing organisations (RPOs) have a fundamental role **to play in research ethics.** In the discussion, it was also brought up that **universities should in fact take the lead in developing research ethics and integrity guidelines in new research domains.** It is also important to train the trainers and to educate ethics trainers and advisors, as they will then be able to help project managers, principal investigators, and ethics panel members on ethics.

### **Training and awareness actions**

In contexts and countries where there is limited capacity, collaboration, teaming up with other institutions on research integrity and ethics review issues and training are the main ways forward to address the relevant challenges. Some countries brought up that the educational part is important, and that **a continuous (lifelong) education and learning process is needed on threats to research ethics and on ways to overcome them.** Rules and guidelines need to be adjusted to new scientific and technological developments. Ways to do science changes very quickly (i.e., AI), and rules are often dated and irrelevant when new developments happen. It is difficult for policy-makers to keep up with the speed of new scientific discoveries and developments.

At the same time, there is a need to increase ethical awareness among researchers and institutions in particular disciplines like computer science where ethical sensitivity in institutional terms is still quite limited. That is necessary as all reports and technological trends point to the need to **develop a thorough ethical understanding of the risks at the point of innovation as technologies are rapidly developing, and we may come too late in addressing ethical issues there.** In fact, engineering researchers could have a great influence on setting up socially sustainable and inclusive digital infrastructures and carry huge weight.

One discussant brought forward the example of a research ethics committee that was composed by experts in certain scientific fields but with little experience in formal ethics. This particular composition proved to be quite effective given that when only ethics experts are on board, they might not understand the specific risks to the discipline and may over-identify things that do not make sense in a specific context. Therefore, it may be worth engaging scientific researchers in the ethics evaluation process to enhance the quality of the ethics review process and to educate themselves on ethics matters including how to flag ethical issues. It is also important to find new ways to enhance reflection and responsibility throughout the research lifecycle.

In certain countries, scientific and/expert knowledge is approached as one (out of many) types of knowledge. That leaves space for non-scientific knowledge and experiences of contextual nature to be taken into account during the ethical evaluation process. Within this frame, scientists and ethicists have a great opportunity in,

for example, participatory action research, to foster relationships at the partner level and develop a common social awareness vocabulary. It was agreed that it is important to bring forward different sectors from the society at large, opening-up new dialogues and approaches to define what RI/RE mean.

### **Actions on fostering international responsible research**

The participants highlighted ethics dumping as a major challenge for the traditional ethics review structures. The discussants acknowledged the need to safeguard that EU member states and international partner countries are on the same page about research ethics and research integrity. It is important to safeguard the participation of a diverse group of professionals and representation from different stakeholders. Policy makers and funding agencies **should include research ethics and integrity in Memoranda of Understanding (MoUs) with third countries**. In certain countries, there are discussions on a decolonising ethics framework, as there are natives and immigrants that bring different perspectives, compared to what the European colonisers brought with them. Participants also brought up that it is important to be aware when cooperating with researchers in different countries that there are **very different views on ethics**. Hence, when considering cooperation with third countries, it is important to discuss how research ethics and integrity are understood and interpreted in non-EU contexts.

The discussants also brought forward the challenge related to the differences in stringency of ethics oversight among different countries. **A transnational approach is not only desirable, but also necessary** given the transnational nature of research and research collaborations. The funders have a special responsibility to harmonize ethical approaches. This is enabled greatly through multinational programmes (such as Horizon Europe), through multilateral collaboration following common values. Before collaboration is established **it is important to agree on these common values and approaches**.

A very high-level discussion is taking place on values, ethics and integrity which is needed to set the basis on how to approach very sensitive issues (e.g., AI and data protection). However, there is an **imminent need for EU to work at the practical level along with USA and China in order to find creative ways to implement guidance and establish collaboration avenues**. On the one hand, **participants emphasized the need to encourage international cooperation as much as possible on common challenges. But on the other hand, research organisations may not have the means to support their researchers**. There may be legal burdens to set up their research in collaboration with other partners.

The participants proposed the model of procedurally coordinated multi-site ethics review **structures that would be based on adequacy agreements and commonly agreed clear guidelines on ethics and integrity related to research cooperation with research teams and entities in different third countries**. A question was therefore raised on whether one should allow for some greater flexibility on research ethics and integrity to encourage international cooperation, i.e., allowing that there are different perspectives on ethics and integrity in the countries, just to encourage further international cooperation.

### **Actions on promoting stakeholder engagement**

The terms and conditions of involving stakeholders in the scientific process was also discussed during this session. Although funders are important, **other stakeholders should also be heard and coordinated**: the

beneficiaries, communities, government officials, smaller communities and sub-groups within a broader group, patients, doctors, or computer engineers, companies, universities.

Overall, a discussion framework should be organized among policy-makers (funders, research institutions, academic entities, etc.) and at the same time **a separate discussion could take place at societal level** (e.g. discussion deriving from EU projects, including public interest groups and bottom-up initiatives). Inter-institutional and inter-disciplinary collaboration is definitely needed that would take cultural diversity into account. **We do need this kind of guidelines or mechanisms at different levels**, including politically, at government level, scientific collaboration, but also the micro-level in the specific projects and programmes.

**We need to ensure that there is no loss of integrity during crises.** It is necessary **to put all stakeholders together even under time pressure**: people from ethics committees, researchers and implementers, and generate a common understanding of the issues. It often feels like there is a barrier of communication, with a misunderstanding of the processes each time. The participants said that it is important for all these groups to come together and talk and ensure that everyone works towards the same direction and generate a common understanding.

At the same time, it was raised that dialogue and education on research ethics and integrity are not in themselves sufficient: without available resources, updated material and institutional continuity (there are often staff changes in research projects), it will be very difficult to establish learning conditions and common point of departure.

### **Actions on promoting the empowerment of the “citizen scientists”**

In the frame of the discussion, **it was brought up how and to what extent, citizens can be brought into the design of research and become embedded in research teams, beyond their possible role as participants to a research study.** Citizens are the final addresses and recipients of the findings/products of the research process, and **should not be seen as external to research ethics and integrity.** There was an agreement among discussants about the need to involve citizens in the ethical review of research projects in a meaningful way.

As far as the ethical aspects of research are concerned, **co-creation** was proposed as it could help ethical governance structures to take into account a variety of perspectives from researchers. It was agreed that **considering the needs and priorities of local populations** becomes even more important when developing ethical guidelines in the domain of international research. Peer groups can become invited and reflect on what researchers are doing.

**Furthermore, ethics and research integrity principles and frameworks need to be defined in a community context** to find out what is acceptable at the local level or not. The French Charter for the responsible adoption of neurotechnology (Charte française de l'innovation responsable en neurotechnologies) represents an excellent example of co-creation as many actors contributed to its drafting. Its inclusive character can be attributed to the active participation of citizens, enterprises, start-ups, etc. There is a high expectation that this inclusive approach in which the charter was constructed will lead to researchers following the elements outlined. **Engaging citizens** requires sharing the goals and promoting a sense of self-respect. For example, making them understand why citizens become involved in the scientific process and become more aware of

being valued for their participation and input to a research project. **Discussants agreed on the need to have people informed of the purpose and to participate in the design of the research methodology.**

**Citizen science should be seen as an opportunity to educate the broader population on ethics and integrity,** making science relevant. Within this frame, **a decentralized approach in designing research integrity and ethics standards** was also proposed. It was brought up that citizens could be included not only in research projects but also in scientific evaluations, or even in the drafting of calls for proposals. This would bring science closer to the society. During the discussion, it became evident that narrowing the gap between scientists and citizen in almost all areas of research could be achieved via the design of **dialogue ‘opportunities’.**

**Scientists should not only educate the people, but the people should be equally involved in such a dialogue.** This requires mutual empowerment, acceptance of different goals, then the role of [citizen scientists] will be justified. To be more open to reality, or true information, in their collaboration with scientists. They could add value to knowledge and the outcome of the research. Within this frame, **scientific literacy** needs to be seen as a key requirement **for the empowerment of citizens.** In certain countries, ‘citizen scientists’ empowerment **depends on the level of education of ‘citizen scientists’.** Citizens are empowered **through the use of a diary method that includes** notes of observations in their community or of particular phenomena.

Citizen scientists should be seen as people that gather data, and ‘research subjects’ people that offer data. Sometimes a person can be both. **Protecting citizens as research participants and empowering them at the same time is a challenging process.** In fact, many participants recognized the fact that mandatory education for researchers in ethics is not sufficient; such education and raising awareness is needed much before that, in early ages. **The UK ethics panels that review pediatric trials and the Royal Society’s science programmes** for schools represent good examples of science communication and citizens’ engagement from an early stage. Some participants expressed their concerns about the institutional involvement of citizens in ethics review committees and boards, as there is a risk of anti-scientific populists taking over the agenda and capturing the entire process. In general, a broader societal engagement in the context of ethics review and ethics governance is vital for ensuring a constructive and fit-for-purpose approach to the future of ethics and integrity review in an ever-changing research landscape.

Concrete issues arise in terms of data protection. For example, who will keep the data if you ask citizens to collect data on health issues. If it is about birds, astronomy, mosquitos, data on rivers, then it is easier for people to collect data. But for participants to collect data from other citizens/participants, there is a clear need for **comprehensive guidelines on data governance and to clarify who owns the scientific project.** There is the recent experience in the UK of amateur historians who found the bones of Richard III and had to collaborate with archaeologists. But when archaeologists needed to do proper research, then the amateur historians were outraged that their project had been taken over by academics (The Lost King film).

Last but not least, the example of medical research protocols, representatives of patient communities with different types of diseases or other health issues could be used as a successful example of active engagement with the medical community, to exchange information and points of view. Of course, this practice is more developed in medical communities, but we have seen it and could expand it in other areas. At the minimum, **at least we must ensure that there are no barriers for these kinds of groupings to evolve.**

## KEY TAKEAWAYS

- Research integrity and ethics are intrinsically crucial in shaping a trustworthy knowledge base that could lead to socio-economic development and advancement as well as to the improvement of living standards, health, and wellbeing of citizens.
- Numerous initiatives worldwide highlight the key role of research ethics and integrity as an essential pillar of all efforts to ensure the high quality of science as a prerequisite for achieving excellence in research and innovation.
- Policy-makers along with research-funders, researchers and citizen communities, more than ever before, need to work hand-in-hand to shape a culture of ethically sound research in which responsible behaviour is the norm at individual and institutional levels.
- Current efforts on safeguarding equity, justice and fairness in research should be guided by both local best practices and international codes of conduct in research.
- The emergence of disruptive technologies such as artificial intelligence, machine learning and gene editing trigger the need to reconceptualise traditional research ethics reviews and efforts to promote research integrity and minimize misconduct.
- New technology-driven challenges appear to question, for example, the ability of the long-established ethics review structures to ensure the embedment of human rights in the development of digital technologies and to protect 'digital rights' and 'digital principles' in the context of international research.
- There is an increasing need to limit ethics dumping and strengthen responsible conduct of research and research cooperation based on equitable partnership frameworks.
- Beyond the need for a degree of normative convergence, issues such as capacity building, benefit-sharing, and a multi-value research ethics approach to the responsible and ethical governance of research constitute important policy challenges.
- Promoting a continuous involvement of ethics expertise, capacity building, community participation and advice in the various stages of the research endeavour from idea to product to application that could prevent developing countries from simply becoming testing hubs for research protocols is of outmost policy importance.
- We need to find new ways to embed not only a human-centric approach to the research design of transformative technologies but also to put diversity, mutual trust and respect and inclusivity at the centre of a new model of fair research partnerships.
- The forthcoming adoption of the Cape Town Statement on Fostering Research Integrity is expected to pave the way for strengthening the accountability and fairness of our global research structures and practices.

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## **ANNEX**

### **LIST OF PARTICIPATING COUNTRIES AND OTHER ORGANISATIONS**

<b>Albania</b>	<b>Croatia</b>	<b>International Science Council</b>
<b>Australia</b>	<b>Denmark</b>	<b>OECD</b>
<b>Austria</b>	<b>India</b>	<b>UNESCO</b>
<b>Belgium</b>	<b>Kenya</b>	<b>ALLEA</b>
<b>Brazil</b>		<b>CESAER</b>
<b>Canada</b>		<b>COST Association</b>
<b>Chile</b>		<b>EARMA</b>
<b>China</b>		<b>EARTO</b>
<b>Czech Republic</b>		<b>EASSH</b>
<b>Finland</b>		<b>EUA</b>
<b>France</b>		<b>European Commission</b>
<b>Georgia</b>		<b>EuroScience</b>
<b>Germany</b>		<b>EuroTech</b>
<b>Greece</b>		<b>Science Europe</b>
<b>Hungary</b>		<b>The Guild</b>
<b>Ireland</b>		<b>Yerun</b>
<b>Italy</b>		
<b>Japan</b>		
<b>Latvia</b>		
<b>Lithuania</b>		
<b>Luxembourg</b>		
<b>Malta</b>		
<b>Mexico</b>		
<b>Morocco</b>		
<b>Netherlands</b>		
<b>New Zealand</b>		
<b>Norway</b>		
<b>Poland</b>		
<b>Portugal</b>		
<b>Slovenia</b>		
<b>South Africa</b>		
<b>Sweden</b>		
<b>Switzerland</b>		
<b>Türkiye</b>		
<b>United Kingdom</b>		
<b>United States of America</b>		