



European  
Commission

#EthicsGroup\_EU

European Group  
on Ethics in  
Science and New  
Technologies

# General Activity Report

2017-2021

European Group  
on Ethics in Science and  
New Technologies



Research and  
Innovation

## European Group on Ethics in Science and New Technologies General Activity Report 2017-2021

European Commission  
Directorate-General for Research and Innovation  
Unit 03

Contact EC-ETHICS-GROUP@ec.europa.eu  
Email RTD-PUBLICATIONS@ec.europa.eu  
European Commission  
B-1049 Brussels

Manuscript completed in December 2021.

This document has been prepared for the European Commission, it does not necessarily reflect the views of the institution, and the European Commission shall not be liable for any consequence stemming from reuse.

More information on the European Union is available on the internet (<http://europa.eu>).

PDF	ISBN 978-92-76-41065-2	doi:10.2777/576406	KI-06-21-048-EN-N
-----	------------------------	--------------------	-------------------

Luxembourg: Publications Office of the European Union, 2021

© European Union, 2021



The reuse policy of European Commission documents is implemented based on Commission Decision 2011/833/EU of 12 December 2011 on the reuse of Commission documents (OJ L 330, 14.12.2011, p. 39). Except otherwise noted, the reuse of this document is authorised under a Creative Commons Attribution 4.0 International (CC-BY 4.0) licence (<https://creativecommons.org/licenses/by/4.0/>). This means that reuse is allowed provided appropriate credit is given and any changes are indicated.

For any use or reproduction of elements that are not owned by the European Union, permission may need to be sought directly from the respective rightholders. The European Union does not own the copyright in relation to the following elements:

Image credits:

Cover: ©TheVisualsYouNeed, #241206534, 2021. Source: stock.adobe.com

European Group on Ethics in Science  
and New Technologies

# **General Activity Report**

2017-2021

*Brussels, 15 December 2021*

## Table of Contents

<b>FOREWORD BY THE CHAIR .....</b>	<b>3</b>
<b>1. THE EGE .....</b>	<b>5</b>
<b>2. THE WORK OF THE EGE, 2017-2021 .....</b>	<b>6</b>
<b>2.1. EGE Opinions and Statements .....</b>	<b>6</b>
2.1.1. Artificial Intelligence .....	6
2.1.2. The Future of Work.....	7
2.1.3. Genome editing .....	8
2.1.4. COVID-19 .....	9
2.1.5. The role of values and ethics in European and global governance .....	10
<b>2.2. Engaging stakeholders .....</b>	<b>11</b>
2.2.1. Transparency .....	11
2.2.2. Expert hearings .....	11
2.2.3. Round tables .....	12
2.2.4. Round Table on the Future of Work .....	12
2.2.5. Round Table on the Ethics of Genome Editing .....	13
2.2.6. Relations with National Ethics Councils.....	14
2.2.7. Relations within the European science and ethics ecosystem .....	14
2.2.8. Relations with international organisations .....	15
<b>2.3. Building global partnerships .....</b>	<b>16</b>
2.3.1. The European Commission's International Dialogue on Bioethics .....	16
2.3.2. Bi-regional dialogues .....	16
<b>2.4. Impacting EU policy .....</b>	<b>17</b>
2.4.1. Providing policy guidance to the European Commission .....	17
2.4.2. Inter-Service Group on Ethics and EU Policies .....	18
2.4.3. Relations with the European Parliament and Council .....	19
<b>3. THE WORK OF THE EGE, 2017-2021 .....</b>	<b>20</b>
<b>3.1. A European Green Deal.....</b>	<b>20</b>
<b>3.2. A Europe Fit for the Digital Age .....</b>	<b>21</b>
<b>3.3. An economy that works for people .....</b>	<b>22</b>
<b>3.4. A stronger Europe in the world .....</b>	<b>22</b>
<b>3.5. Promoting our European way of life .....</b>	<b>23</b>
<b>3.6. A new push for European democracy .....</b>	<b>23</b>

## FOREWORD BY THE CHAIR

### ***The Turn towards concepts***

Never before have sciences and new technologies been so much at the centre of public attention as in recent years, when developments in artificial intelligence, genome editing, and the Corona pandemic have challenged the global community in many ways. Already in recent EGE reports, Göran Hermeren and Julian Kinderlerer have pointed out that ethical issues at the intersection of sciences, technologies, and societies have become more fundamental over time. This has come to a head in recent years, particularly as a result of the pandemic with its manifold effects in all individual and societal spheres of life, in such a way that the need for a broad societal debate about the foundations on which we want to build our future has become unmistakable. What do justice and solidarity mean in the European Union? What do we mean by human and non-human nature and how much are they worth to us? What is the relationship between freedom and responsibility? How can we succeed in using our social institutions, for example in the world of work, to assert human dignity and to combine freedom with social security? How can we live in peace and prosperity in an economically, ecologically and socially sustainable way?

### ***The great importance of social debate***

Questions of such a fundamental nature do not have simple and unambiguous answers. They have to be negotiated repeatedly in society, approaches to solutions have to be developed and critically reflected upon again and again. The EGE has participated in this process through its statements, opinions and various events with many stakeholders. In its recommendations, the EGE has repeatedly emphasized the indispensable role of an open, societal debate, for which there must also be a conducive institutionalized framework and local and temporal spaces for encounters.

### ***The need for cooperation between all sciences***

It has also become clear in recent years that inter- and transdisciplinary cooperation between the sciences is indispensable and must be further developed. In view of the complexity of the issues, no one scientific discipline alone can provide the answers. It is only from the compilation of different findings, the exchange between different perspectives, and in joint reflection between the natural sciences and the humanities in a respective broad understanding of the scientific fields that the culture of questioning and progress can contribute to solve pressing societal issues. The collaboration of the EGE's and the GCSA has shown this impressively on pandemic issues. Ethical deliberation do not arise only in the application of already developed technology; it already plays a role in the formulation and selection of those issues to which research and development then relate.

***Many thanks to many***

After four years of intensive work, I would like to express my sincere thanks to all those involved: to the members of the EGE for their imaginative, committed efforts and the debates that were as critical as they were friendly; to the Secretariat for its varied and wise support; to all the representatives of the European Commission and Parliament, as well as to all the experts and stakeholders who supported our work with their valuable contributions; and, last but not least, to the media, which made our work visible to the public.

A handwritten signature in black ink, reading 'Chr. Woopen'.

Prof Dr Christiane Woopen, Chair of the EGE

## **1 THE EGE**

The EGE is an independent, multi-disciplinary body appointed by the President of the European Commission, which advises on all aspects of Commission policies and legislation where ethical, societal and fundamental rights dimensions intersect with the development of science and new technologies.

The EGE was initially established in 1991 by President Jacques Delors. It reports to the President, and to the College of Commissioners as a whole, under the direct responsibility of the Commissioner for Innovation, Research, Culture, Education and Youth. The Group's legal mandate is enshrined in [Commission Decision \(EU\) 2021/156](#), determining its central role in the integration of ethics in EU policymaking.

The membership of the EGE is composed of high-level independent experts, whose knowledge in their field of expertise, foresight and wisdom integrate into transdisciplinary and widely informed policy advice. The Group consists of 15 members, who regularly meet in Brussels or online and whose work is coordinated by the EGE Team in Unit 03 of the European Commission's Directorate General for Research and Innovation.

The members of the EGE during the 2017-2021 mandate were Christiane Woopen (Chair), Herman Nys (Deputy Chair), Siobhan O'Sullivan (Deputy Chair), Emmanuel Agius, Anne Cambon-Thomsen, Ana Sofia Carvalho, Eugenijus Gefenas, Julian Kinderlerer, Andreas Kurtz, Jonathan Montgomery, Laura Palazzani, Barbara Prainsack, Carlos Maria Romeo Casabona, Nils-Eric Sahlin and Marcel Jeroen Van den Hoven.

Their appointment was launched in March 2017 by Jean-Claude Juncker, President of the European Commission, and Carlos Moedas, Commissioner for Research, Science and Innovation. The new Group brought together leading experts from Europe and the world, from the fields of natural and social sciences and humanities, philosophy, ethics and law. Members ranged from scientists who have spearheaded cutting-edge biomedical techniques, to leading scholars in the study of information technologies, philosophy of science and human rights law. They brought a wealth of experience advising governments on the societal and human rights implications of current and future developments.

The Group convened for the first of many meetings, including their first working lunch with Commissioner Carlos Moedas, on 24 and 25 April 2017, and held their last meeting on 11 May 2021. In the course of the 2017-2021 mandate, the Group provided advice on artificial intelligence (2018), the future of work (2018), COVID-19 and health crises (2020, three deliveries), genome editing (March 2021) and the role of values and ethics in European and global governance (May 2021).

## 2 THE WORK OF THE EGE, 2017-2021

During its 2017-2021 mandate, the EGE issued Opinions on the future of work and on the ethics of genome editing, and Statements on artificial intelligence, on solidarity and fundamental rights in the COVID-19 pandemic and on the overall role of values in policymaking, as well as the fruits of its joint work with the Group of Chief Scientific Advisors of the European Commission and Professor Peter Piot, Special Advisor to the President of the European Commission on COVID-19, on health crises, including an Opinion on pandemic preparedness and management and a Statement on science advice in times of crisis.

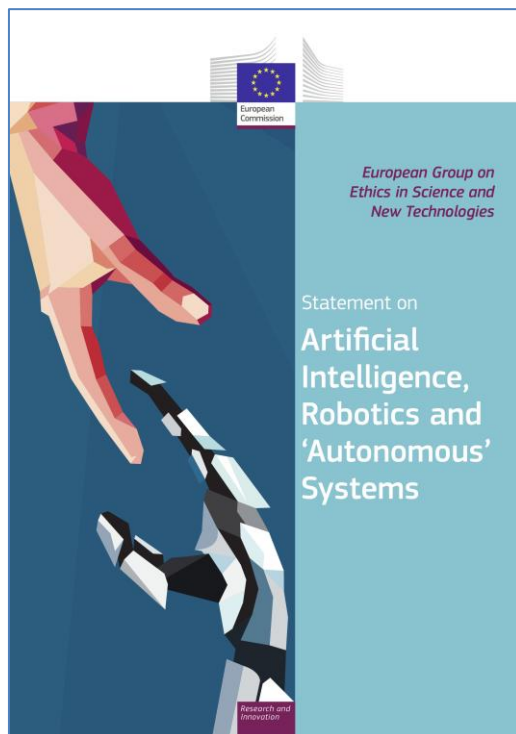
The work on an EGE Opinion is launched on the basis of a formal request from the Commission President to develop advice on a specific topic. The Group then dedicates an intense series of working meetings, over several months, to discussing the matter at hand and formulating its findings and recommendations. Rigorous research, ethical analysis and debate undertaken amongst the members of the Group is complemented by a broad range of external expertise gathered via the organisation of expert hearings and Round Tables. Particular attention is thereby paid to involving a broad cross-section of stakeholders, including the scientific community, NGOs and civil society organisations, representatives of industry and other interest groups, policymakers and European Institutions representatives.

### 2.1 EGE Opinions and Statements

#### 2.1.1 Artificial Intelligence

In 2018, the EGE issued its [Statement on Artificial Intelligence, Robotics and 'Autonomous' Systems](#). Building on a detailed ethics analysis, the Statement called for a wide-ranging process of public deliberation and laid out a set of fundamental ethical principles to pave the way. It outlined how AI may interact with questions of human dignity and autonomy; responsibility; justice, equity and solidarity; democracy; rule of law and accountability; security, safety and integrity; data protection and privacy; and sustainability.

It was particularly well received and taken up, not only inside the Commission but also in academic and other policy circles. The EGE has since

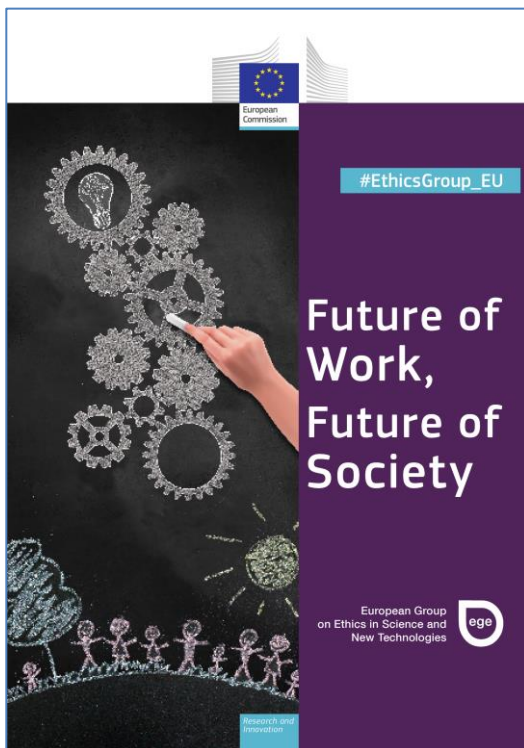




been a key reference on the Ethics of AI. The AI Alliance, established in the context of the EU AI Strategy ('Artificial Intelligence for Europe' Communication of April 2018), was tasked to develop Guidelines on the Ethics of Artificial Intelligence on the basis of the EGE Statement and in collaboration with the EGE. The EGE was thus given a structural role in this context and was represented in the High-Level Expert Group on Artificial Intelligence. The AI Strategy placed the development of a robust ethical and legal framework as a sine qua non and central objective. Together with a series of related initiatives, this has resulted in the European Commission's legislative proposal on AI, published in April 2021.

### 2.1.2 The Future of Work

The EGE Opinion [\*Future of Work, Future of Society\*](#), published in December 2018, also keeps providing important insight into the ethical and governance implications of the transformative impacts of digitalisation. It cautions against these transformations contributing to a widening inequality gap and increased precarity and shows the limitations of existing social models to guarantee decent livelihoods for many Europeans.



To address these challenges, the Opinion presents an enticing proposal of "societal upskilling", meaning a shift from the usual focus on individual upskilling and the overwhelming private responsibility to achieve that goal, to society and the institutions that administer it. Concrete proposals are to consider how social security benefits can be provided outside of formal employment arrangements and that Member States implement fiscal policies that reduce income inequality and ensure a fair distribution of the wealth created as a result of technology and automation.

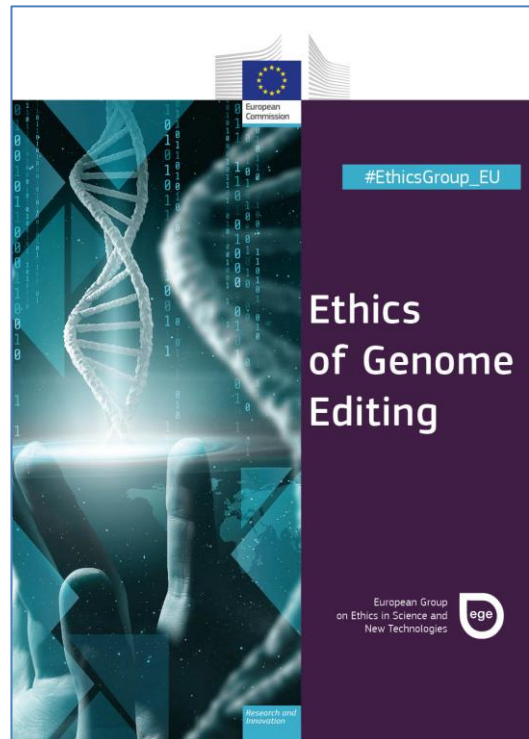
In the course of the development of this Opinion, the EGE organised a Round Table to hear, and debate with, participants from all sections of society; met with Giovanni Buttarelli, the European Data Protection

Supervisor (EDPS) and the EDPS Ethics Advisory Group for an exchange on both Groups' ongoing work; and held several hearings. EGE members keep being invited to present its analyses and recommendations at international conferences and other events.

### 2.1.3 Genome editing

The EGE delivered its Opinion on [Ethics of Genome Editing](#) in March 2021, building on the previous Group's Statement on gene editing (2016). The Opinion discusses ethical questions raised by recent developments in the field, such as CRISPR-Cas9, across all domains of application including human health, agriculture and the environment. Its detailed area-specific analyses are complemented by overarching considerations on long-debated questions revived by genome editing, for example, about the different meanings that ought to be attributed to humanness, naturalness and diversity. On this basis, the Opinion proposed an interlocking and mutually reinforcing triple-helix approach consisting of wide-ranging and inclusive societal deliberation, joint monitoring and lesson-learning with regard to both regulatory and scientific developments, and concerted international engagement towards global governance.

In order to ensure that genome editing, as all socio-technical arrangements, is governed taking account of all and including due regard to all present and future generations, the EGE underscores the importance of societal deliberation to be pluralistic, inclusive and based on democratic principles, integrating fora of debate on local and European levels with broad international dialogue of global scope.



To inform its deliberations on the issue, the EGE organised a Round Table with a broad selection of stakeholders and held several hearings. It also convened with other advisory bodies working on the issue, such as the WHO's Advisory Committee on Human Genome Editing.

The Opinion was issued at a key moment and in a context of acute political need. In November 2019, the Council of the European Union had requested the Commission to submit, by 30 April 2021, a study in light of the Court of Justice's judgement (case C-528/16) on novel genomic techniques under Union law. The study built on the EGE Opinion with regard to ethical and societal aspects.

### 2.1.4 COVID-19

With regard to COVID-19, the EGE stepped up as a first-mover and key authoritative reference in the international ethics domain and beyond. It has worked on the issue from the pandemic's outbreak to the end of the mandate. This resulted in three publications.



The Group first provided guidance in a Statement on [\*European solidarity and the protection of fundamental rights in the COVID-19 pandemic\*](#) in early April 2020, calling for a rallying of solidarity at the European and global level and underlining the core ethical considerations that are key in shaping the pathway out of the pandemic. These build on an understanding of solidarity that is inclusive of all on the basic idea of equal worth of all human beings, transcending differences in origin or age, for example.

The Statement describes the interplay between social justice and sustainable recovery and resilience policies, it discusses the role of, and the pressure on, values and fundamental rights in emergency situations; and it calls for transparency as regards crisis management and science advice, for resource sharing in crisis situations and for cooperation in innovating responsibly for a sustainable future.

The EGE then joined forces with the Commission's Group of Chief Scientific Advisors (GCSA) and Peter Piot, Special Advisor to the Commission President on COVID-19, to co-develop a series of outputs related to the issue. Their joint [\*Statement on scientific advice to European policy makers during the COVID-19 pandemic\*](#) was published in June 2020 and addressed the relationship between scholarship and governance and the role of ethics in policy advice and in crisis management.

It provided guidance for the provision of advice in pandemic situations as they are characterised by complexity and uncertainty. To ensure efficient and effective policies, advice should be multi-disciplinary, and provided through early and frequent exchange with policy-makers. Transparency and openness are crucial. Clarity on what is known, what is not known, and what cannot be known is very

important as illustrated by debate around the use of facemasks, the ability of children to spread the disease, or the maximum level of protection offered by a possible vaccine. Also critical is that there is a clear distinction between advice, decision making and implementation roles.

In November 2020, the collaboration of the EGE with the GCSA and Peter Piot yielded an extensive Opinion examining lessons learned from the crisis and suggesting paths for [\*Improving pandemic preparedness and management\*](#). The EGE brought in a broad perspective, which considers the manifold consequences of pandemics and containment measures beyond the core health crisis. The Opinion explores issues such as unemployment and social rights, dynamics of discrimination on the basis of age, gender and ethnicity, and how unsustainable ways of living increase the risk of epidemic outbreaks. It highlights that health crises disproportionately affect the most vulnerable members of societies and that resilience, prevention and preparedness imply a modelling of societal structures on the basis of solidarity, equity and sustainability.

The Opinion was delivered at a key moment, markedly shaping the “European Health Union: Stronger EU preparedness and response for health crises” which was presented by the Commission in November 2020.

### **2.1.5 The role of values and ethics in European and global governance**

In May 2021, the EGE published a Statement on [\*Values for the Future: the role of ethics in European and global governance\*](#), drawing lessons and identifying key concerns in this regard from the experiences gathered throughout what had been a rich five-year mandate of providing ethical guidance on a diversity of topics. The Statement’s issuing was particularly timely in the context of the Conference on the Future of Europe.



The challenging circumstances of our time have prompted the Group to develop this reflective work on the importance of values, in moments of crisis and always. The Statement begins with primary perspectives on the role of ethics in human societies and their governing institutions and further builds on a warning about the increasing pressure on values and fundamental rights in the face of the different crises the global community is

facing. The EGE showed how every human intervention in the world is shaped by values, and how this results in what ought to become a newly recognised importance of ethics in governance.

The members emphasised that shared values cannot be set by those in power, but are the outcome of dynamic debate and practice. Inclusive deliberation about which and how values shall shape our future-making is therefore key. The role of ethics in institutional settings, for example the mandate of ethics advisory bodies, is often limited to reacting to already ongoing developments, leading to moral principles potentially being conceived as obstacles to innovation and change. Rather, the members make the point that ethics is not a stumbling block but a compass, and that therefore it ought to be attributed a more prominent, front-loaded role in policy making. Upholding the values we hold dear does not just mean discursively referring to them at regular intervals. It means making good on the promises they hold, through built-in, participatory ethics-for-governance mechanisms and from the earliest stages of agenda-setting

## **2.2 Engaging stakeholders**

As Commissioner Moedas noted in the first meeting of the Group, the EGE is positioned between policymaking, science and society. Understanding and integrating different perspectives, and doing so transparently, is at the core of developing holistically informed ethical advice. It was therefore central to the EGE's work also throughout this mandate to engage with citizens and different societal groups. The EGE enacts a number of channels for broad dialogue with external stakeholders.

### **2.2.1 Transparency**

Transparency is written into the EGE's legal mandate and underpins all aspects of the Group's functioning, from member selection to meetings and from stakeholder engagement to publication of outputs. The 15 members of the EGE were appointed by the President of the European Commission following an open call for applicants published online. The Group's legal mandate and rules of procedure are publicised on the EGE website, as are the meeting agendas and the names of all experts invited to participate in hearings.

The EGE website also serves as the key tool for communicating EGE activities and disseminating publications. All publications can be downloaded free of charge and presentations, proceedings and videos of events, such as the Round Tables and the European Commission's International Dialogue on Bioethics, are made available. The website also provides contact details for any enquiries.

### **2.2.2 Expert hearings**

Expert hearings provide an important means for the EGE to gather specialised external expertise during the development of Opinions. For each of the Opinions

produced under the EGE's 2017-2021 mandate, leading experts (e.g. academics, practitioners and representatives of civil society with specialist expertise) were invited to present their knowledge and views at EGE plenary meetings. This took the form of sessions of approximately two hours, comprising a presentation to the Group followed by in-depth debate with the members.

In selecting the experts to participate in hearings, careful attention was paid to ensuring a proper balance between diverse approaches and perspectives. The names of the invited experts can be found in the EGE meeting agendas on the EGE website.

### **2.2.3 Round Tables**

The previous EC Decision on the EGE, as well as the current EC Decision (2021/156),<sup>1</sup> forming the basis of the EGE's legal mandate, provides for the organisation of a public Round Table for each Opinion of the EGE in order to promote its development on the basis of dialogue, inclusivity and transparency. These events have indeed become a key means of garnering a broad-based input. They aim at stimulating debate on the topic of the Opinion under preparation, exploring the issue from a range of perspectives, and identifying gaps and outstanding questions.

The two Round Tables of the 2017-2021 mandate took place in February 2018 and in October 2019. They were open to the public (free of charge) and saw wide participation comprising a broad cross-section of stakeholders, including the scientific community, representatives of industry and other interest groups, policymakers and civil society organisations. The panels of speakers reflected this variety of participants. Ample time slots were allocated to debate, providing everyone the opportunity to highlight issues they felt merited special attention and to engage directly with the members of the Group.

To maximise participation in the discussion, an open invitation was sent to relevant stakeholders (EU and beyond) and published on the EGE website, and the Round Tables were web-streamed via the EGE website. In addition, written comments from interested parties were welcome and were integrated into the Opinions.

### **2.2.4 Round Table on the Future of Work**

The EGE's public Round Table on the Future of Work took place on 5 February 2018. It brought together a wide range of stakeholders from different sectors of society, including academic experts, international organisations, industry, trade unions and NGOs. Questions around the concept of work were discussed, with a focus on

---

<sup>1</sup> Commission Decision (EU) 2016/835 and Commission Decision (EU) 2021/156, the latter having been adopted on 9 February 2021 to replace the former.



ethical, moral and governance aspects. The event unfolded in four panels with talks from key stakeholders, followed by an open discussion.

The first panel raised fundamental questions of why we work, how work gives us meaning as individuals and members of society, to what extent work can create both community and disparity, and which 'social contract' we envisage for the generations to come. The second panel explored the opportunities and dangers associated with new employment forms, such as gig and platform work. The third panel addressed the consequences of automation and digitalisation on the world of work. The concluding panel was dedicated to questions about governance and ethics.

Valuable input of the panellists was collected and fed into the EGE's Opinion on the Future of Work.

### **2.2.5 Round Table on the Ethics of Genome Editing**

The EGE Round Table on the Ethics of Genome Editing of 16 October 2019, as well as the International Dialogue on Bioethics and Ethics of Science and New Technologies (ID-BEST) organised the following day, were timed and convened in the context of the Global Ethics and Bioethics Week 2019. The week is a joint initiative to promote bioethics and the ethics of science and technology, emphasising awareness raising and the importance of structural public engagement on these critical issues. Perspectives and conclusions from the Round Table fed into the preparation of the EGE's Opinion on Ethics of Genome Editing.

The event was opened by Carlos Moedas, Commissioner for Research, Science and Innovation and comprised three panels: The first panel focused on genome editing in humans, disentangling the complex ethical, social and moral questions associated with modifying the human genome, through both somatic and germline (heritable) genome editing. While genome editing offers the potential to treat and prevent life-threatening diseases, it invokes questions of safety, risk and uncertainty in a domain where we do not yet have full understanding of how the genome functions. The panel explored how genome editing technology bears on principles of human dignity, responsibility and justice: What do we owe to future generations, what societal consequences arise with the ability to 'design' human beings and what does it mean for notions of humankind?

The second panel focused on the use of genome editing in animals, including its application in experimental research and agriculture. With genome-edited farm animals touted to become a key part of the agricultural system, the panel explored questions of animal welfare, food security and the impact of genome editing on the wider agricultural model of industrial farming. In research, using genome-edited animals to model human diseases or grow organs for transplantation raises questions about the limits of 'humanisation', and whether the use of certain species such as non-human primates deserve special ethical consideration. How should new techniques to engineer living things bear on our treatment of animals as sentient beings with their own intrinsic value?

The third panel explored the complex ethical questions linked to genome editing in plants, including its application in agriculture as well as wider biodiversity considerations. The genome editing of plants intended for the human food chain poses questions of safety, traceability and how to engage with public perception and preferences against a background of contested knowledge. The panel touched upon specific regulatory implications, as reflected in the July 2018 ruling by the European Court of Justice which decrees that new techniques such as genome editing are, by law, genetic modification and must be regulated as such. Furthermore, it asked how we might weigh the potential benefits of this technology (in terms of food security, sustainability, combating climate change) against its potential impacts on the commercial agricultural model and possible risks to biodiversity and the environment.

The points raised and discussed during the event informed the development of the EGE's Opinion on Ethics of Genome Editing.

#### ***2.2.6 Relations with National Ethics Councils***

The EGE also has a long tradition in engaging with National Ethics Councils (NEC). Their regular meeting, the NEC-EGE Forum, provides a good platform for debating the topics the EGE works on and consulting fellow ethicists. These are hosted by the NEC of the country holding the rotating Presidency of the EU Council. Six were held in the period 2017-2021, by Estonia (2017), Austria (2018), Romania (2019), Croatia (2020), Germany (2020) and Portugal (2021). At each meeting, the Chair and members of the EGE presented the Group's current work and collected valuable input from the attendees.

The EGE's participation in the six Fora included the chairing of sessions on the ethics of artificial intelligence and discussions of the EGE's work on the future of work at the meetings in Estonia and Austria; a presentation of the EGE's Statement on solidarity and fundamental rights in the COVID-19 pandemic in Croatia; a session on the joint work of the EGE with fellow advisors on pandemic preparedness and management at the German Forum; and the presentation of the EGE's Opinion on the ethics of genome editing at the Portuguese meeting.

#### ***2.2.7 Relations within the European science and ethics ecosystem***

While always considering the global dimension of the topics it covers, the EGE provides ethics advice within a European context. It therefore has strong ties to the European science and ethics ecosystem.

One of the Group's first exchanges with a fellow ethics committee was launched at the meeting of the EGE with Giovanni Buttarelli, the European Data Protection Supervisor (EDPS), and with the EDPS Ethics Advisory Group in December 2017. The two groups discussed their ongoing work on ethical questions in the context of automation and digitalisation. The good interinstitutional collaboration was sustained



over time and indeed the conference presenting the final report marking the completion of the work of the EDPS Ethics Advisory Group was jointly convened by Giovanni Buttarelli and the Head of the EGE's Scientific Secretariat.

The EGE also participated in the yearly European Research and Innovation Days (R&I Days), the European Commission's annual flagship Research and Innovation event, bringing together policymakers, researchers, entrepreneurs and the public to debate and shape the future of research and innovation in Europe and beyond. The EGE's members hosted and contributed to various sessions throughout the 2017-2021 mandate, on themes ranging from responsible AI and the future of work through to meta-reflections on science and ethics advice for policymaking. Similarly, EGE members engaged with academies, such as for the production of a SAPEA podcast on multidisciplinarity and ethics in science advice in 2020.

At the 2018 EuroScience Open Forum (ESOF) in Toulouse the EGE played a central role with one of the Group's members having served as the ESOF 2018 Champion. The EGE hosted a session on 'Ethics in the age of science, technology and innovation: From AI to the Future of Work'; it co-hosted a second one with the European Commission's Group of Chief Scientific Advisors exploring the question 'What kind of future do we want for our children?'; and its members were invited to speak in various other panels on diverse topics. Despite the difficult circumstances faced by the organisers due to the COVID-19 pandemic, the EGE was also well-represented at Trieste's ESOF 2020.

### ***2.2.8 Relations with international organisations***

The European Commission is represented by Jim Dratwa, the Head of the EGE Scientific Secretariat, in the formal fora of the international ethics framework such as the United Nations Inter-Agency Committee on Bioethics and with the international organisations tasked with the ethics and governance of science and new technologies (including UNESCO, WHO, Council of Europe, OECD, notably). The European Commission participates in meetings of the relevant committees, cooperates to international developments and keeps counterparts informed about EU developments, priorities and activities, including those of the EGE.

October 2017 saw a historic joint meeting of the EGE and the Council of Europe's DH-BIO Group, jointly convened by the European Commission and the Council of Europe. The meeting followed the Council of Europe's international conference on the 20<sup>th</sup> anniversary of the Oviedo Convention and provided an opportunity for joint reflection between the two groups on the evolution of ethics and the challenges posed by new scientific and technological developments such as genome editing.

Reinforced cooperation on topics of relevance were also developed. As a case in point, dedicated meetings were organised with the WHO's Advisory Committee on Human Genome Editing, bringing the two groups together to discuss the application of new genome editing technologies in humans as they both simultaneously worked on the challenging ethical questions arising with the development of new precision

technologies in the field. The COVID-19 pandemic also gave rise to such reinforced cooperation, as indicated above.

## **2.3 Building global partnerships**

Under the 2017-2021 mandate of the EGE, relations with ethics councils across the globe have remained important as part of a concerted strategy to promote ethical discussion in international policymaking and to advance peace, democracy and human rights worldwide. The on-going endeavour to strengthen global cooperation on ethics is key to placing the European Union at the forefront of developing the norms and principles underpinning advancements in science and technology.

### **2.3.1 The European Commission's International Dialogue on Bioethics**

In 2009, the Commission established the International Dialogue on Bioethics and Ethics of Science and New Technologies (IDBEST) with the aim to cluster Chairs of National Ethics Councils or equivalent bodies from different regions of the world to allow a better exchange of information and communication between them. This conference, which is organised by the EGE Scientific Secretariat, has developed into an important platform of debate and mutual learning.

The 2019 IDBEST gathered representatives of Ethics Councils from around the world, of international organisations (UNESCO, WHO, OECD and Council of Europe), and other foremost international thinkers on ethics. It examined ethical challenges arising in the field of genome editing and more broadly the role of ethics in the governance of new technologies. In light of the rapid developments in the domain of genome editing, the event garnered a variety of insights drawn from national contexts across the world and facilitated international exchanges on the development of global standards for genome editing and other emerging technologies. The IDBEST, as well as the preceding EGE Round Table, were timed and convened in the context of the Global Ethics and Bioethics Week 2019, a joint initiative to promote bioethics and the ethics of science and technology, emphasising awareness raising and the importance of structural public engagement on these critical issues.

### **2.3.2 Bi-regional dialogues**

As part of its strategy to forge international cooperation on ethics in science and technologies, the Commission laid the groundwork in 2014 for new bi-regional dialogues. These dialogues aim to consolidate and deepen targeted collaboration with key global partners and emerging regional players within the international ethics framework. They comprised the African Union - EU dialogue, the Latin America - EU dialogue and the US - EU dialogue. The 2017-2021 mandate of the EGE saw the China - EU Dialogue (2019), while the foreseen continuation of the US - EU Dialogue had to be interrupted given the absence of a US bioethics council under the administration of the time.

The EGE convened with the Ethics Committee of the Chinese Academy of Sciences (CAS) in 2019. Representing the first formal exchange between the two high-level advisory bodies, the dialogue focused on the ethics and governance of new technologies, on differences and commonalities in approaches, as well as on possibilities for future cooperation and dialogue.

## **2.4 Impacting EU policy**

### **2.4.1 Providing policy guidance to the European Commission**

Also in the 2017-2021 mandate, collaborative links have been forged at the highest level of the institution and with representatives of the European Commission services across a range of relevant Directorates-General. Their input has been sought during the selection of Opinion topics and during the elaboration of EGE Opinions, in order to ensure that the EGE's policy advice responds to the needs of Commission policymakers and takes into account the compelling ethical issues confronting the Commission on a daily basis. These networks of cooperation have also provided a key means to disseminate the EGE's findings and policy recommendations upon the publication of EGE Opinions and Statements and have led to fruitful cooperation and take-up of EGE advice within the institution and beyond.

Such was the case with the impact of the EGE's work on the ethics of artificial intelligence. In 2018, the Group issued its [Statement on Artificial Intelligence, Robotics and 'Autonomous' Systems](#), in which it called for a wide-ranging process of public deliberation and laid out a set of fundamental ethical principles to pave the way. The Statement was particularly well received and taken up, not only inside the Commission but also in academic and other policy circles. The EGE has since been a key reference on the Ethics of AI. The AI Alliance, established in the context of the EU AI Strategy ('Artificial Intelligence for Europe' Communication of April 2018), was tasked to develop Guidelines on the Ethics of Artificial Intelligence on the basis of the EGE Statement and in collaboration with the EGE. The EGE was thus given a structural role in this context and was represented in the High-Level Expert Group on Artificial Intelligence. The AI Strategy placed the development of a robust ethical and legal framework as a *sine qua non* and central objective. In 2019, the EGE also provided an open letter to the President of the European Commission setting out a constructive set of suggestions for the way forward on Ethics and Artificial Intelligence. These recommendations were explicitly taken up in the course of the two years that followed.

In a related policy area, in November 2017, the President of the European Commission appointed Jim Dratwa (the Head of the EGE Team) as the representative of the European Commission in the newly established international Task Force on the Ethical and Societal Implications of Connected Automated Driving (CAD). The Ethics Task Force issued its Report in June 2018. Among its

Recommendations stands the setting up, entrusted to the European Commission, of a dedicated forum on the ethical implications of new forms of mobility.<sup>2</sup> This was also taken up in the EU Strategy for mobility of the future<sup>3</sup> and this setting up was indeed carried out. In this policy area, the EU Strategy established an enhanced institutional standing and structural role for the EGE in the EU institutional system.

Similarly, the EGE's work on COVID-19 and ethical questions that emerge in the context of pandemics was highly appreciated and impactful. The joint Opinion [\*Improving pandemic preparedness and management\*](#), co-developed with the Commission's Group of Chief Scientific Advisors (GCSA) and Peter Piot, Special Advisor to the Commission President on COVID-19, provided an important reference point for the European Commission in developing the proposals for a 'European Health Union: Stronger EU preparedness and response for health crises', presented by the Commission in November 2020 and directly referring to the recommendations put forward in the Opinion.

The EGE Opinion on [\*Ethics of genome editing\*](#) was also issued at a key moment and in a context of acute political need. In November 2019, the Council of the European Union requested the Commission to submit, by 30 April 2021, a study in light of the Court of Justice's judgement (case C-528/16) on novel genomic techniques under Union law. The study built on the EGE Opinion with regard to ethical and societal aspects and its development benefitted from intense collaboration between the EGE team and the Directorate General for Health and Food Safety.

The EGE's work has also fed into the development of European Commission policy at the inter-institutional level. On the basis of the EGE's work on AI ethics, the EGE team has continued to be involved in Commission initiatives on, for example, the ethics of connected and automated driving, just as it has been contributing to the revision of the legislation on blood, tissues and cells.

#### **2.4.2 Inter-Service Group on Ethics and EU Policies**

The Inter-Service Group (ISG) on Ethics and EU Policies provides the platform to facilitate exchange on and coordinate the European Commission's actions in the fields of ethics and EU policies. It brings together representatives from departments across the Commission to exchange information on policy files with an ethical dimension.

---

<sup>2</sup> <https://www.bmvi.de/SharedDocs/EN/publications/report-ethics-task-force-automated-driving.pdf> (2018), p. 6.

<sup>3</sup> European Commission: Communication, *On the road to automated mobility: An EU strategy for mobility of the future*. [https://ec.europa.eu/transport/sites/transport/files/3rd-mobility-pack/com20180283\\_en.pdf](https://ec.europa.eu/transport/sites/transport/files/3rd-mobility-pack/com20180283_en.pdf) (2018), p. 16.

Topics discussed within the ISG during the period 2017-2021 have included the future of work and education for a changing workplace, artificial intelligence, connected and automated driving, genome editing and COVID-19.

The last meeting of the ISG under the EGE mandate 2017-2021 took place in December 2020 and convened colleagues of a wide range of Commission departments to broadly reflect upon emerging policy challenges that would benefit from ethical analysis and could be integrated into the future work programme of the EGE under its new mandate.

### ***2.4.3 Relations with the European Parliament and Council***

The European Parliament is an important conduit of ethical guidance and interlocutor for the EGE. The EGE enjoys a close working relationship with the Science and Technology Options Assessment Panel (STOA) and representatives are regularly invited to participate in EGE events and vice versa. Members of the EGE participated, for example, in the 2017 STOA panel 'Ethical and Social Challenges of Agricultural Technologies', moderated by an EGE member; in the European Parliament's 2018 dialogue seminar with churches, religious and philosophical organisations on 'Artificial Intelligence – Ethical Concerns', which involved a presentation of the EGE's main viewpoints on AI ethics; and the 2021 STOA panel 'The challenges of genome editing in plants, with a focus on crops', at which the EGE presented its Opinion on Ethics of Genome Editing.

The work of the EGE has also been drawn upon at the level of the Council. The most remarkable example is the set of presentations given on the EGE Opinion on Ethics of Genome Editing throughout 2021.

### **3 THE EGE AND ETHICS IN THE CONTEXT OF THE 6 POLICY PRIORITIES OF PRESIDENT VON DER LEYEN**

Ahead of her appointment as the next President of the European Commission, Ursula von der Leyen set out the political agenda for her five-year term (2019-2024) in the strategy 'A Union that strives for more'. The new Commission's priorities were sketched out in Ursula von der Leyen's political guidelines, presented prior to her confirmation as President of the Commission in July 2019, and further developed in the Commission's 2020 work programme (CWP 2020), adopted on 29 January 2020.

The latest political guidelines rely on six policy areas in which the European Union could make a difference, and, as stated by President von der Leyen, they underline the importance of 'working together to allay fears and create opportunities'. A remarkable development is that all the policy areas under consideration no longer focus primarily on the present but rather are aimed at the long-term.

In September 2020, the EGE wrote to President von der Leyen, in support of the ambitious statements she had made in her first State of the Union address, placing values at the core of her work programme. The response to the letter was a strong endorsement of the EGE as a body, as well as of the work that it delivers.

The following presents an overview of the six priorities, examining each issue area from an ethical perspective and pinpointing those dimensions that may be a source of ethical questions or challenges in the years to come.

#### **3.1 A European Green Deal**

In the wake of climate crises, top priority has been given by President von der Leyen to preserve Europe's natural environment and biodiversity. Alongside the Green Deal, the objective is to ensure climate neutrality by 2050, while boosting the competitiveness of European industry and ensuring a just transition for all the regions and workers affected. The European Green Deal focuses on the Next Generation EU instrument, as the European Council decided that at least 30% of the 2021-2027 MFF and Next Generation EU spending should support climate objectives. Another critical dimension of the Commission's commitment is transforming the EU into a modern, resource-efficient and competitive economy. To this end, a 'farm-to-fork strategy' for sustainable food and a new action plan for the circular economy become vital elements. Adopted in March 2020, they promote the sustainable use of assets, especially in resource-intensive sectors with a high environmental impact, such as textiles and construction.

While these advances represent a crucial step in defining a more sustainable European policymaking, this priority speaks to fundamental questions. Those concern how we interact with our environment, which obligations we have toward the human and non-human world, how to prevent the new push towards a more sustainable economy from producing widespread poverty and loss of freedom, and, finally, how to support future generations fairly and effectively. The overriding concern is to respect human beings as such, beyond our life spans. Notwithstanding,

so far, there is an increasingly widespread feeling that future generations' interests have been neglected as governments and other political actors fail to consider them when it comes to public decision-making. If so, we must consider ways of redesigning political institutions to safeguard their needs.

Besides, broader ethical questions are linked to the solidarity issue. A central concern is strengthening international solidarity, grounded in human rights, and reducing inequalities related to climate change. An ethically sound political design cannot be exempt from this type of considerations. Although several ethical debates have already arisen within these frameworks, the EGE can offer a valuable guide to orient this vast macro-area. Indeed, this kind of reflection goes to the heart of the Group's mandate, addressing long-standing problems that threaten to have a far-reaching impact on the fundamental European ethical values.

### **3.2 A Europe Fit for the Digital Age**

With the extremely rapid growth of the digital world, its ever-increasing influence on people's lives, also exacerbated by the COVID pandemic, the European Commission outlined the main strands of a policy aimed at building a Europe that is 'fit for the digital age'. This objective is intended to be achieved in parallel to ensuring a climate-neutral Europe by 2050. Indeed, the new EU's digital strategy insists on the possibility of attaining technological sovereignty in certain critical technology areas, setting clear ethical and legal standards concerning data practices, technology development and use and infrastructure innovation.

The European Commission's vision for shaping Europe's digital future rests on three main pillars: technology that works for people, a just and competitive economy, and an open, democratic and sustainable society. In this context, new issues are coming to the fore, requiring critical ethical reflection: how should the EU deal with the necessity of building excellence? At the same time, how can it gain and ensure citizen's trust? What are the ethical implications of the contemporary digital society? What will be its long-term impact? In addition, such trends invoke significant tensions between digitisation and green conversion, despite mutually propaedeutic. A strong emphasis on green innovation and new technologies - both in the production of goods and the consumption of products and services - runs the risk of leaving segments of society behind. The impact and magnitude of these trends open up profound considerations. An ethical reflection is needed at this juncture, to consider the most effective pathways to a just transition.

This priority encompasses a spectrum of sensitive policy areas already, also explored by the EGE in its Statement on AI Ethics and its Opinion on the Future of Work. They include defining the ethical framework for a European connected digital single market, understanding how to regulate our institutions to serve the individuals' well-being, to how assess AI accountability and its underlying values. Still, a myriad of other interlinked topics remains uncovered. In an era in which technology is playing an increasingly important role, previous and future work of the EGE may provide a valuable reference for the Commission in tackling all the ethical barriers that arise from such a comprehensive and multifaceted issue.

### **3.3 An economy that works for people**

The European Union has always been a project concerned with socio-economic well-being/prospering. However, lately, several unprecedented internal and external challenges to the EU, including the financial and economic crisis, the socio-economic impact of the pandemic, and the increasing unemployment rates among the younger population, have reinforced the need for a fair transition for all towards a green social market economy. Then boosting the economy should also mean emphasizing jobs securitisation while reducing poverty and inequalities, supporting smaller businesses, and deepening the Economic and Monetary Union.

As President von der Leyen reflected in the communication on 'a strong social Europe for just transitions' of January 2020, concerning the implementation of European Social Pillar principles, "implementing them upholds the commitment, made at the highest level, that people are at the centre, regardless of change, and that no one is left behind".

The third Commission priority calls for social fairness and opens a wide array of ethical issues. Among those questions, central ones about the evolving role and vocation of the welfare state and the need to foster equality emerge. In addition, the principle of fair access to employment and education should be complemented by strong democratic accountability, which ought to be strengthened. At the core of these future-oriented questions are issues of justice, human dignity and solidarity. If these principles have always underpinned the European project, they are also concepts whose contours are routinely redefined and reshaped by changing economic, social and political realities. For this very reason, these dimensions underscore the importance of ethical advice as they continue to shape the European mission and its role in the world.

### **3.4 A stronger Europe in the world**

To reassert its leading role globally to continue setting a high example of solidarity and mutual learning, the European Union must ensure fair and sustainable competition with just labour standards and border cooperation with neighbour countries. Indeed, in her political guidelines, President von der Leyen affirmed that the EU would support a multilateral rules-based order by 'strengthening our unique brand of responsible global leadership, and gradually build-up a more assertive and united Europe with strategic autonomy'.

This agenda encompasses a spectrum of ethically sensitive policy areas in need of careful consideration. Critical reflections are owed to Europe's responsibility towards the most vulnerable countries and the balance regarding their autonomy and freedom, peacebuilding within foreign policy, and efforts towards the global sustainable development goals. Likewise, to reinforce its role, the European Union should intensify its attempts to put together a solid external action that serves European values. Indeed, strengthening diplomatic relations and promoting international cooperation on policy objectives such as security, climate change and



trade, must be pursued without undermining the EU's position as a normative power, a bearer of standards such as democracy, human rights, peace, equality and solidarity.

However, striking the right balance between different goals can open up complex ethical dilemmas. At this junction, the work of the EGE can support the identification of the various critical points, while also recalling potential trade-offs that should be respected.

### **3.5 Promoting our European way of life**

From the outset, the European Union has always been conceived to protect the rule of law, safeguard fundamental rights, judicial cooperation between states, solidarity and justice. In a nutshell, the EU is an ambitious project based upon solid principles. All these commitments cannot be taken for granted; instead, they must be nurtured and promoted inside and outside our borders.

The fifth priority of the European Commission is a holistic understanding of the above. Indeed, under this point lies the engagement in upholding fundamental rights and the rule of law as the foundation of equality, tolerance and social fairness. Moreover, it highlights the need to tackle security risks, protect and empower consumers, enhance a legal and secure migration system, effectively manage the EU's external borders, and, finally, work closely with partner countries. The desired commitment to health, migration, justice and security, on the basis of the values of solidarity and dignity, is intended to realise the dream of the European Union as a bearer of principles that can serve as an inspiration to the world.

This ambition can only be achieved with a high degree of transparency in the political process and greater involvement and trust by European citizens. In affirming: "I want Europe to strive for more by strengthening our unique brand of responsible global leadership", President Ursula von der Leyen firmly acknowledges the very thorny ethical dimensions of this priority area. If Europe wants to be a front-runner, a clear understanding has to be reached on what kind of Europe we want to live in, what values should guide this society, and ultimately how to fulfil our promises in the long run.

### **3.6 A new push for European democracy**

The common threads running through the final set of priorities in von der Leyen's political guidelines are stronger inter-institutional cooperation, a more transparent and, finally, an inclusive decision-making process focused on the needs of European citizens. Indeed, the record-high turnout in the 2019 European elections shows the dynamism of European democracy. Yet, citizens need a more substantial role in the decision-making process and a more active part in setting priorities. To that end, three main strands need to be addressed: protecting democracy from external influences such as misinformation and hate speech, restoring citizens' trust, and ensuring political transparency. As the Commission President has commented in her

work programme, “Upholding a strong and vibrant democracy in Europe is a question of legitimacy and trust. Democracy is a core value of our Union, together with fundamental rights and the rule of law. However, European democracy faces multiple challenges, both from outside and from within”.

In this vein, the European Commission has announced the will to uphold a new push for democracy as one of its priorities. This objective has been concretized by adopting the new EU Action Plan on Human Rights and Democracy, the European Democracy Action Plan, and launching a landmark Conference on the Future of Europe.

With this in mind, the EGE has already formulated a Statement on the role of values and ethics in human societies. However, this domain is always evolving, as everything is constantly in flux with society itself. Therefore, there is an ongoing demand for reflection on a future ethics for Europe that aims to secure and protect the democratic values we are based on, which should be ambitious and does not leave difficult questions unresolved.

## THE MEMBERS OF THE EGE, 2017-2021



**Christiane Woopen**  
*Chair of the EGE*



**Herman Nys**  
*Vice-Chair of the EGE*



**Siobhán O'Sullivan**  
*Vice-Chair of the EGE*



**Emmanuel Agius**



**Anne Cambon-Thomsen**



**Ana Sofia Carvalho**



**Eugenijus Gefenas**



**Julian Kinderlerer**



**Andreas Kurtz**



**Jonathan Montgomery**



**Laura Palazzani**



**Barbara Prainsack**



**Carlos Maria Romeo Casabona**










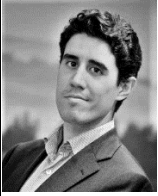




**Nils-Eric Sahlin**



**Marcel Jeroen Van den Hoven**

## THE EGE TEAM, 2017-2021

	<b>Jim DRATWA</b> Head of the EGE Team
	<b>Barbara GIOVANELLI</b> Policy Officer
	<b>Marta JASINSKA</b> Policy Assistant
	<b>Vincenza FALLETTI</b> Policy Assistant
	<b>Joanna PARKIN</b> Policy Officer
	<b>Ann ARO</b> Administrative Assistant

	<b>Aylin AVCIOGLU</b> <b>Policy Assistant</b>
	<b>Andrés ÁLVAREZ FERNÁNDEZ</b> <b>Policy Assistant</b>
	<b>Florence DOSE</b> <b>Administrative Assistant</b>
	<b>Rasida EL HAOUZI</b> <b>Administrative Assistant</b>
	<b>Maija LOCANE</b> <b>Policy Assistant</b>
	<b>Carolina POLITO</b> <b>Policy ('Blue book') Trainee</b>
	<b>Elena SCACCIAFRATTE</b> <b>Administrative Assistant</b>

With many thanks also to the members of the EGE Team prior to 2020.

## Getting in touch with the EU

### IN PERSON

All over the European Union there are hundreds of Europe Direct information centres.

You can find the address of the centre nearest you at:

**[https://europa.eu/european-union/contact\\_en](https://europa.eu/european-union/contact_en)**

### ON THE PHONE OR BY EMAIL

Europe Direct is a service that answers your questions about the European Union.

You can contact this service:

- by freephone: **00 800 6 7 8 9 10 11** (certain operators may charge for these calls),
- at the following standard number: **+32 22999696**, or
- by email via: **[https://europa.eu/european-union/contact\\_en](https://europa.eu/european-union/contact_en)**

## Finding information about the EU

### ONLINE

Information about the European Union in all the official languages of the EU is available on the Europa website at: **[https://europa.eu/european-union/index\\_en](https://europa.eu/european-union/index_en)**

### EU PUBLICATIONS

You can download or order free and priced EU publications from:

**<https://op.europa.eu/en/publications>**. Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see **[https://europa.eu/european-union/contact\\_en](https://europa.eu/european-union/contact_en)**).

### EU LAW AND RELATED DOCUMENTS

For access to legal information from the EU, including all EU law since 1952 in all the official language versions, go to EUR-Lex at: **<http://eur-lex.europa.eu>**

### OPEN DATA FROM THE EU

The EU Open Data Portal (**<http://data.europa.eu/euodp/en>**) provides access to datasets from the EU. Data can be downloaded and reused for free, for both commercial and non-commercial purposes.

This report describes the main activities of the European Group on Ethics in Science and New Technologies (EGE) in the course of its 2017-2021 mandate, the context of increasing demand for far-sighted ethical advice, the variety of domains and stakeholders engaged in the development of these ethical frameworks, as well as a set of forward looking perspectives. The EGE is an independent body appointed by the President of the European Commission to provide advice on all aspects of Commission policies and legislation where ethical, societal and fundamental rights dimensions intersect with the development of science and new technologies.

*Research and Innovation policy*

