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Commission

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► PROGRAMME

OPEN ROUND TABLE ON THE ETHICS OF Gene Editing

16 October 2019

Walter Hallstein Room, Berlaymont

European Group on Ethics
in Science and New Technologies



Research and
Innovation

Programme of the Round Table on the Ethics of Gene Editing

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**EUROPEAN GROUP ON ETHICS
IN SCIENCE AND NEW TECHNOLOGIES**

**OPEN ROUND TABLE
ON THE ETHICS OF
GENE EDITING**

16 October 2019

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Table of Contents

ABOUT THE EVENT 3

PROGRAMME 4

SHORT BIOGRAPHIES OF THE SPEAKERS 6

 Panel 1: Gene Editing in Humans 6

 Panel 2: Gene Editing in Animals..... 7

 Panel 3: Gene Editing in Plants, Biodiversity and Gene Drives 10

THE EUROPEAN GROUP ON ETHICS IN SCIENCE AND NEW TECHNOLOGIES 12

THE EGE MEMBERS 13

EGE ANALYSES 16

THE EGE TEAM..... 18

ABOUT THE EVENT

The Round Table gathers a broad spectrum of stakeholders drawn from academia, industry, policy and civil society, to discuss the ethical questions raised by recent developments in gene editing, such as CRISPR-Cas9, across all domains of application including human health, agriculture, and the environment.

Perspectives and conclusions from the roundtable will feed into the preparation of the EGE's Opinion on the Ethical Implications of Gene Editing, requested by the European Commission, and due to be issued beginning of 2020.

The event is opened by Carlos Moedas, Commissioner for Research, Science and Innovation and will comprise three panels:

The first panel focuses on gene editing in humans, disentangling the complex ethical, social and moral questions associated with modifying the human genome, through both somatic and germline (heritable) gene editing. While gene 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 explores how gene 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 focuses on the use of gene editing in animals, including its application in experimental research and agriculture. With gene-edited farm animals touted to become a key part of the agricultural system, the panel explores questions of animal welfare, food security and the wider impact of gene editing on the industrial model of food production. In research, using gene-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 explores the complex ethical questions linked to gene editing in plants, including its application in agriculture as well as wider biodiversity considerations. The gene 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 touches upon specific regulatory implications, as reflected in the July 2018 ruling by the European Court of Justice, which decrees that new techniques such as gene editing are, by law, genetic modification and must be regulated as such. Furthermore, it asks 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.

PROGRAMME

09:00 – 09:30 **Registration and welcome coffee**

09:30 – 10:00 **Opening by Carlos Moedas, European Commissioner for Research, Science and Innovation**

Introduction by Professor Christiane Woopen, Chair of the EGE

10:00 – 11:20 **Gene Editing in Humans**

Introduction by Professor Siobhan O’Sullivan

Vice-Chair of the EGE

Dr. Kathy Niakan, Group Leader, Francis Crick Institute

Dr. Hervé Chneiweiss, member of the WHO expert advisory committee on developing global standards for governance and oversight of human genome editing

J Patrick Clarke, Vice President, European Disability Forum

Moderated by Professor Emmanuel Agius

Member of the EGE

11:20 – 11:40 **Break**

11:40 – 13:00 **Gene Editing in Animals**

Introduction by Professor Anne Cambon-Thomsen

Member of the EGE

Dr. Ian Ragan, Dr. Mark Prescott, UK National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs)

Dr. Tsutomu Sawai, Institute for the Advanced Study of Human Biology (WPI-ASHBi), KUIAS Kyoto University

Ana Granados, Director of the European Forum of Farm Animal Breeders (EFFAB) and General Secretary of the Farm Animal Breeding & Reproduction Technology Platform (FABRE TP).

Dr. Penny Hawkins, Head of the Research Animals Department, RSPCA Science and Policy Group, Eurogroup for Animals

Moderated by Professor Ana Sofia Carvalho

Member of the EGE

13:00 – 14:30 **Lunch break**

14:30 – 15:50 Gene Editing in Plants, Biodiversity and Gene Drives

Introduction by Professor Julian Kinderlerer

Member of the EGE

Professor Brian Wynne, Professor Emeritus of Science Studies, Lancaster University; Board member of ENSSER, The European Network of Scientists for Social and Environmental Responsibility

Max Schulman, Arable Crops Advisor at MTK, Finnish Farmers' Union, Copa and Cogeca

Nina Holland, Agribusiness campaigner, Corporate Europe Observatory

Joanna Dupont-Ingliss, Secretary General, EuropaBio

Moderated by Professor Nils-Eric Sahlin

Member of the EGE

**15:50 – 16:50 Conclusions:
The Role of Ethics in the Governance of New Technologies**

Open discussion moderated by Professor Barbara Prainsack

Member of the EGE

16:50 – 17:20 Farewell

SHORT BIOS OF THE SPEAKERS

Panel 1: Gene Editing in Humans

Kathy Niakan, Group Leader at the Francis Crick Institute



Kathy Niakan is a Group Leader at the Francis Crick Institute in London where her laboratory investigates mechanisms that direct how the first cell types become specialized in their fate and function in human embryos.

She was the first scientist in the world to use CRISPR/Cas9 genome editing techniques to study gene function in human embryos and discovered the role of a key gene in human embryo development. Research equipment and objects from her lab have been exhibited at the Science Museum in London and are part of the permanent collection. In

collaboration with Mary Herbert and Doug Turnbull at Newcastle University, work from her laboratory was provided as evidence to the UK Department of Health ahead of a vote in 2015 in the UK House of Commons and House of Lords to change regulation allowing the clinical use of mitochondrial replacement therapy. Kathy is a Blavatnik Award UK Finalist in Life Sciences and was named Time Magazine's 100 Most Influential People, Nature Journal "Ones to Watch", Guardian Newspaper's "Rising Stars" and The Evening Standard London's most influential people in Medicine. Kathy obtained a B.Sc. and B.A. from University of Washington, a PhD at University of California, Los Angeles and undertook postdoctoral training at Harvard University. She was a Next Generation Research Fellow at University of Cambridge.

Hervé Chneiweiss, MD PhD. Director Research centre Neuroscience Paris Seine (Sorbonne University, CNRS, Inserm), Chair Inserm Ethics Committee, Chair International Bioethics Committee UNESCO



Hervé Chneiweiss is a neurologist and neuroscientist, MD-PhD, Research Director at the CNRS. He is currently head of the research centre Neuroscience Paris Seine (CNRS /Inserm/Sorbonne University) and Glial Plasticity team. Trained as a neurologist (gait and movement disorders, Parkinson), he then investigated neurogenetics of human diseases (cerebellar ataxias). His scientific work was mostly dedicated to the biology of astrocytes and their roles in brain tumour origin and progression, identifying cell-intrinsic mechanisms orchestrating brain tumour cells plasticity. He has authored more than 150 academic papers.

He is also involved in bioethics, presently chair Inserm Ethics Committee (IEC), chair International Bioethics Committee UNESCO and former member French National Advisory Ethics Committee (CCNE, 2013-2017). He wrote several books or chapters on bioethics of human embryos, human genetics and neurosciences. On the basis of an opinion of the IEC in 2015 on genome editing he was an active promoter of a european initiative "Fostering Responsible Research with Genome Editing Technologies" that resulted in the international association ARRIGE (Association for Responsible Research and Innovation in Genome Editing. Vice-President: <https://arrige.org/>). He is also member WHO advisory committee on developing global standards for governance and oversight of human genome editing.

J Patrick Clarke, Vice President, European Disability Forum



Pat Clarke is the Vice President of the European Disability Forum and President of European Down Syndrome Association. He is retired as Chief Executive of Down Syndrome Ireland and Past- President of Down Syndrome International.

His son, David, aged 38 has Down syndrome.

Pat is immediate past Chair of the Disability Federation of Ireland and has served on the boards of the Children Rights Alliance Ireland and on the governing body of the International Disability Alliance. He was a member of the Council of Europe Committee which investigated the involvement of persons with disabilities in political and public life. He has worked with the International Foundation on Electoral Systems (IFES) and the OSCE/ODIHR on issues relation to the inclusion of persons with disabilities in political life and the monitoring of this participation.

His involvement with the European Disability Forum, the International Disability Alliance and the Disability Federation of Ireland gives him a pan disability perspective on all the issues.

He has been a long-time advocate for the full inclusion of people with Down syndrome in particular and all people with disabilities in general in society at every level.

Panel 2: Gene Editing in Animals

Dr Ian Ragan, former Board Member of the UK National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs)



Dr Ian Ragan is a retired neuropharmacologist and an independent consultant in the biomedical sector. He spent nearly 20 years in the pharmaceutical industry, most recently with Eli Lilly as Executive Director, Neuroscience Research, Europe, and Executive Director, European Scientific Affairs.

He was a founder member of the Research Directors' Group of the European Federation of Pharmaceutical Industries and Associations (EFPIA) and one of the originators of the Innovative Medicines Initiative. He has been chair of the R&D Committee of the Association of the British Pharmaceutical Industry and the Executive Director of the European Brain Council.

He has been a board member, chair, scientific advisor or project co-ordinator for many organisations including the UK Advisory Committee on Misuse of Drugs, Autistica, the Biotechnology and Biological Sciences Research Council, Biovail, Capsant Neurotechnologies, EFPIA, the European Partnership for Alternative Approaches to Animal Testing (EPAA), Evotec, the Medical Research Council and Psynova Neurotech.

Recently, he was Director of the National Autism Project and is presently a member of the UK government's Autism Strategy Measuring and Understanding Task and Finish Group. He has been associated with the NC3Rs for many years as a Board Member and chair of several working groups, panels and committees.

Dr Mark Prescott, Director of Policy and Outreach, UK National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs)



Mark J Prescott PhD is Director of Policy and Outreach at the UK's National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs), where he has worked since its inception in 2004. He provides strategic oversight of the Centre's relationships with other research funders and the academic community, including its 3Rs peer review and advice service, regional staff working within UK universities, and office-led programmes on animal welfare and experimental design.

Mark trained as a zoologist and primatologist in Scotland, conducting research in captivity and the field. He has around 25 years' experience in primatology, animal behaviour and animal welfare science, authoring over 50 publications in these areas.

He has served on several ethical and scientific review committees at project, institution, journal and governmental levels, including for the European Commission, Council of Europe, Home Office, Medical Research Council, Biotechnology and Biological Sciences Research Council, Wellcome Trust, International Primatological Society, Primate Society of Great Britain, European Federation for Primatology, MRC Centre for Macaques, Royal Veterinary College, University of Birmingham, PLOS ONE and AAALAC. Recently he was a member of the SCHEER working group convened to review the use of non-human primates in research and alternatives.

Dr Tsutomu Sawai, Institute for the Advanced Study of Human Biology (WPI-ASHBi), KUIAS Kyoto University



Tsutomu Sawai is an Assistant Professor at the Bioethics and Philosophy Group of the Institute for the Advanced Study of Human Biology (WPI-ASHBi), KUIAS Kyoto University.

He is jointly appointed in the Uehiro Research Division for iPS Cell Ethics of the Center for iPS Cell Research and Application (CiRA), Kyoto University. He has a PhD in Human and Environmental Studies from Kyoto University (2016), where his PhD thesis was on the ethics of human induced pluripotent stem cell research.

Prior to this he was awarded a year Oxford-Uehiro-St Cross Visiting Student Scholarship. His research interests lie primarily in issues concerning new and emerging technologies in practical ethics, particularly topics pertaining to human-animal chimera research, stem cell-derived gamete research, brain organoid research, and genome editing research. He published his first book: *The Ethics of Human Induced Pluripotent Stem Cell Research* [in Japanese], Kyoto University Press 2017, which was awarded the 2016 Kyoto University President's Fund for Distinguished Young Scholars.

Ana Granados Chapatte, the Director of the European Forum of Farm Animal Breeders (EFFAB) and General Secretary of the Farm Animal Breeding & Reproduction Technology Platform (FABRE TP).



EFFAB is the voice of the animal breeding and reproduction sector working in poultry, aquatics, ruminants and pig genetics. FABRE TP is active at EU level to promote research and innovation in animal genetics and reproduction, FABRE TP also strengthens collaboration between the private sector, research institutes and universities in Europe. Together, EFFAB and FABRE TP promote Responsible Research and Innovation in genetics.

Ana was educated at the Polytechnic University of Madrid as agronomist in zootechnics with special focus on Animal Reproduction, Genetics. After obtaining her degree, she worked for the Belgium cattle breeding cooperative organisation AWE for twelve years, the first four years as researcher in bull fertility and datamining, the next eight years as head of the bovine semen production laboratory and quality manager. Between 2012 and 2018, Ana worked as animal farming, food and sustainability advisor for the Walloon Farmers Union, FWA. Ana is also active in the Animal Task Force board, the private-public partnership, promoting EU research in the livestock sector.

Penny Hawkins, Head of the Research Animals Department, RSPCA Science and Policy Group, Eurogroup for Animals



Penny Hawkins graduated in biological sciences at the University of Portsmouth in 1992 and completed her PhD in avian physiology at the University of Birmingham in 1996. She joined the Royal Society for the Prevention of Cruelty to Animals (RSPCA) Research Animals Department in 1996, and has been Head of Department since 2015.

The Research Animals Department works to implement the 3Rs and to ensure robust ethical review of animal use in research and testing. The Department's key initiatives include: helping ethics committees to function effectively; improving lab animal welfare and reducing suffering; working with the scientific community to end 'severe' suffering; and providing education and training for all those involved in animal use, in the UK and worldwide. Penny's main area of work relates to supporting and promoting ethics committees, including the UK Animal Welfare and Ethical Review Body (AWERB).

Panel 3: Gene Editing in Plants, Biodiversity and Gene Drives

Brian Wynne, Professor Emeritus of Science Studies, Lancaster University, and; Board member of ENSSER, The European Network of Scientists for Social and Environmental Responsibility



Brian Wynne has an MA (1968) and PhD (1971) in Materials Science from Cambridge University, and MPhil (1977) in History and Sociology of Science from Edinburgh University. At Lancaster University he established and led three interdisciplinary research centres: Science Studies (CSS, 1987-); Centre for the Study of Environmental Change (CSEC, 1991-); and Economic and Social Aspects of Genomics (Cesagen, 2002-2012).

Brian's teaching and research, in many visiting Chairs, lectures and collaborative projects globally, has used his training in science and in sociology and philosophy of scientific knowledge to understand the contingencies shaping scientific knowledge in public arenas, notably risk assessment, but usually understated and overlooked in scientific knowledge for policy. His several books and many publications are highly cited globally.

Brian was an inaugural member of the Management Board and Scientific Committee of the European Environmental Agency, 1994-2000, and Special Adviser to the UK House of Lords Select Committee on Science and Technology Report, *Science and Society* (2000). He was Leader of the Risk Group of the International Institute for Applied Systems Analysis, IIASA, 1983-84, and chaired an EC Expert group on Science and Governance, producing the EU Report, *Taking the European Knowledge Society Seriously*, 2007.

In 2010 Brian was awarded the J.D.Bernal Prize of the Society for Social Studies of Science, 4S, "for distinguished contributions to the field".

Max Schulman, Arable Crops Advisor at MTK (Finnish Farmers' Union), Copa & Cogeca



Max Schulman was born in 1966 in Kirkkonummi in South Finland. He studied at Högre Svenska Lantbruksläroverket, (agricultural college) and took a degree in Agricultural economics in 1992. He took the ownership of the whole family farm in 1994 and now the farm concentrates on cereals, oil seeds and forestry. His farm is located in the South-Western Finland, near Lohja.

Before Max took over the full responsibility of running the farm he worked as Grain Trader for the Finnish Grain Board. In 2001 Max took up a new challenge inside the agricultural machinery sector. He worked from 2003 until 2008 with Valtra tractors - first as product manager and later as product marketing manager of the Valtra Suolahti products worldwide. This job took him all over the world from North America to China.

At the end of 2008 Mr Schulman joined the Central Union of Agricultural Producers and Forest Owners (MTK) as Advisor on cereals and oilseeds sector. From 2010 to 2012 he worked as Vice Chair and from 2013 to 2018 as Chair of the Copa - Cogeca Working Party on Cereals. From 2018 to 2019, Max is chairman of the Civil Dialogue Group on arable crops at DG AGRI.

Nina Holland, Agribusiness campaigner, Corporate Europe Observatory



Nina Holland holds a master's degree in Environmental Sciences from Utrecht University. She works with Corporate Europe Observatory, a research and campaign group based in Brussels that aims to expose and challenge the privileged access and influence enjoyed by corporations and their lobby groups in EU policy making. Her focus is on the lobbying by agribusiness and food industries, covering issues including pesticides, food labelling and GMOs. She is currently a member of the Advisory Board of EU-funded project RECIPES on precaution and innovation, and is involved in various grassroots initiatives such as on local food projects and air quality.

Joanna Dupont-Inglis, Secretary General of EuropaBio



Joanna Dupont-Inglis first joined EuropaBio, the European Association of Bioindustries, in February 2009 and has since worked with its healthcare, agricultural and industrial biotech sectors as well as with its National Associations Council and SME Platform.

EuropaBio's vision is for Innovative Biotechnology Benefitting People and Planet and the Association's mission is to be the recognised voice of the European biotech community, championing world-class solutions for society's challenges.

In September 2018 Joanna was appointed as EuropaBio's Secretary General, having held the role of Deputy Secretary General since March of the same year. Prior to this, Joanna was Director for the Industrial Biotech sector for several years during which time she helped lead industry efforts to create the first €3.7 billion Bio-Based Industries Joint Undertaking (BBI JU), chaired the EU Bioeconomy Stakeholder's Panel and was a board member of SusChem.

Before arriving at EuropaBio Joanna worked for a decade in consultancy in the environmental, agricultural, healthcare, development and energy efficiency sectors together with a broad range of industry, NGOs, member state governments, EU institutions and international organisations. Joanna's formal training is in environmental science and European studies. She is married to a Belgian, has two children and is a dual British/Irish national.

THE EUROPEAN GROUP ON ETHICS IN SCIENCE AND NEW TECHNOLOGIES

The EGE is an independent, multi-disciplinary body appointed by the President of the European Commission and operating under the direct responsibility of Commissioner Moedas. The EGE 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.

Since its inception in 1991, the EGE has adopted 30 Opinions, providing the Commission with high quality and independent advice on such crucial and diverse issues as: future of work, nanotechnology, novel food legislation, animal welfare, embryo research, genetically modified organisms, CAP revision, biodiversity, climate change, global trade, digital agenda, bio-security, environment protection, food security, internet governance, energy, security and surveillance and the future of work. Currently, the EGE is developing an Opinion on the ethics of gene editing.

In addition to producing in-depth Opinions, the EGE also develops shorter Statements. Indeed, the EGE delivered its statement on the Ethics of Artificial Intelligence in March 2018. The statement formed a foundation of the European strategy on Artificial Intelligence ('Artificial Intelligence for Europe', adopted on 25 April 2018) which places the development of a robust ethical and legal framework as its *sine qua non* and central objective. The statement also formed the basis for the guidelines on AI ethics developed in collaboration with the European AI Alliance.

THE EGE MEMBERS



Christiane Woopen

Chair of the EGE, Professor for Ethics and Theory of Medicine at the University of Cologne, Executive Director of the Cologne Center for Ethics, Rights, Economics, and Social Sciences of Health, member of the UNESCO International Bioethics Committee and former chair of the German Ethics Council.



Emmanuel Agius

Professor of Philosophical and Theological Ethics at the University of Malta, Dean of the Faculty of Theology.



Anne Cambon-Thomsen

Emeritus Research Director in CNRS (French National Centre for Scientific Research), member of a joint research unit on epidemiology and public health at Inserm (National Institute for Health and Medical Research) and University Toulouse III Paul Sabatier.



Ana Sofia Carvalho

Professor of Bioethics and Director of the Institute of Bioethics, Catholic University of Portugal, Chair of the Portuguese UNESCO Chair in Bioethics (2014-2017).



Eugenijus Gefenas

Professor and Director of the Department of Medical History and Ethics at the Medical Faculty of Vilnius University, Director of the Lithuanian Bioethics Committee.



Julian Kinderlerer

Emeritus Professor of Intellectual Property Law at the University of Cape Town, elected President of the former EGE (2011 – 2016).



Andreas Kurtz

Biologist, Berlin-Brandenburg Center for Regenerative Therapies, Charité Universitätsmedizin Berlin; Head of the human pluripotent stem cell registry (since 2006).



Jonathan Montgomery

Professor of Health Care Law at University College London, Chair of the Health Research Authority in England, Chair of the Nuffield Council on Bioethics (2012-2017).



Herman Nys

Vice-Chair of the EGE. Emeritus Professor in Medical Law at KU Leuven, editor-in-chief of the European Journal of Health Law and editor of the International Encyclopaedia of Medical Law.



Siobhán O'Sullivan

Vice-Chair of the EGE. Professor in Health Care Ethics and Law, Royal College of Surgeons; former Chief Bioethics Officer, Ministry of Health, Ireland.



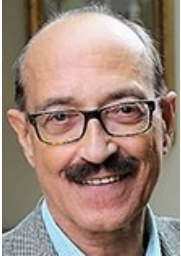
Laura Palazzani

Professor of Philosophy of Law and Biolaw, Lumsa University in Rome; member of the UNESCO International Bioethics Committee; Vice-Chair of the Italian Committee for Bioethics.



Barbara Prainsack

Professor at the Department of Global Health & Social Medicine at King's College London, Professor for Critical Policy Analysis at the Department of Political Science at the University of Vienna.



Carlos Maria Romeo Casabona

Professor of Criminal Law, Director-Chair in Law and the Human Genome, University of the Basque Country; Member of the Committee on Bioethics of Spain.



Nils-Eric Sahlin

Professor of Medical Ethics, Lund University; member of The Royal Swedish Academy of Letters, History and Antiquities; Chairman of The Swedish Research Council's Expert Group on Ethics.



Marcel Jeroen Van den Hoven

Professor of Ethics and Technology at the Delft University of Technology, founding Editor in Chief of Ethics and Information Technology.

EGE ANALYSES

EGE Mandate 2017-2022

- Opinion n°30 - 19/12/2018 - Future of Work, Future of Society
- Statement on Artificial Intelligence, Robotics and 'Autonomous' Systems (2018)

EGE Mandate 2011-2016

- Opinion n°29 - 13/10/2015 - The ethical implications of new health technologies and citizen participation
- Opinion n°28 - 20/05/2014 - Ethics of Security and Surveillance Technologies
- Opinion n°27 - 16/01/2013 - An ethical framework for assessing research, production and use of energy
- Opinion n°26 - 22/02/2012 - Ethics of information and communication technologies
- Statement on the Ethical Implications of Gene Editing and Human Germline Modification (2016)
- Statement on the formulation of a code of conduct for research integrity for projects funded by the European Commission (2015)
- Statement on the proposal for a regulation of the European Parliament and the Council on clinical trials on medicinal products for human use, and repealing Directive 2001/20/EC (COM 2012) 369 final (2012)

EGE Mandate 2005-2010

- Opinion n°25 - 17/11/2009 - Ethics of synthetic biology
- Opinion n°24 - 17/12/2008 - Ethics of modern developments in agricultural technologies
- Opinion n°23 - 16/01/2008 - Ethical aspects of animal cloning for food supply
- Opinion n°22 - 13/07/2007 - The ethics review of hESC FP7 research projects
- Opinion n°21 - 17/01/2007 - Ethical aspects of nanomedicine

EGE Mandate 2000-2005

- Opinion n°20 - 16/03/2005 - Ethical aspects of ICT Implants in the Human Body
- Opinion n°19 - 16/03/2004 - Ethical aspects of umbilical cord blood banking
- Opinion n°18 - 28/07/2003 - Ethical aspects of genetic testing in the workplace
- Opinion n°17 - 04/02/2003 - Ethical aspects of clinical research in developing countries
- Opinion n°16 - 07/05/2002 - Ethical aspects of patenting inventions involving human stem cells

EGE Mandate 1998-2000

- Opinion n°15 - 14/11/2000 - Ethical aspects of human stem cell research and use
- Opinion n°14 - 14/11/1999 - Ethical aspects arising from doping in sport
- Opinion n°13 - 30/07/1999 - Ethical issues of healthcare in the information society
- Opinion n°12 - 23/11/1998 - Ethical aspects of research involving the use of human embryo in the context of the 5th framework programme
- Opinion n°11 - 21/07/1998 - Ethical aspects of human tissue banking

EGE Mandate 1991-1997

- Opinion n°10 - 11/12/1997 - Ethical aspects of the 5th Research Framework Programme
- Opinion n°9 - 28/05/1997 - Ethical aspects of cloning techniques
- Opinion n°8 - 25/09/1996 - Ethical aspects of patenting inventions involving elements of human origin
- Opinion n°7 - 21/05/1996 - Ethical aspects of genetic modification of animals
- Opinion n°6 - 20/02/1996 - Ethical aspects of prenatal diagnosis
- Opinion n°5 - 05/05/1995 - Ethical aspects of the labelling of the food derived from modern biotechnology
- Opinion n°4 - 13/12/1994 - The ethical implications of gene therapy

- Opinion n°3 - 30/09/1993 - Opinion on ethical questions arising from the Commission proposal for a Council directive for legal protection of biotechnological inventions
- Opinion n°2 - 12/03/1993 -Products derived from human blood or human plasma
- Opinion n°1 - 12/03/1993 - The ethical implications of the use of performance-enhancers in agriculture and fisheries

THE EGE TEAM



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