
WHO

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Letter from the Secretary-General

Dearest Delegates, Faculty Advisors, and others,

It is my pleasure and honour to be able to welcome you all into the 21st edition of San Silvestre MUN. To think that after months of work, after observing other conferences over the better part of two years, I can finally say that our own is coming to fruition. For over seven months the Secretariat and I have poured our hearts and efforts into this conference, and hopefully, you may all enjoy the months of work we have put into the two days that are to come, and live SSMUN 2024 to its absolute fullest.

My own 'first impression' of MUN was, quite honestly, less than graceful to say the least. Having attended training sessions in 2022 (but having paid attention to nearly none of them), I haphazardly found myself attending SSMUN 2022, this very month two years ago. I did not speak more than once. I was terrified, watching those around me debate with a fervent skill unlike anything I had ever seen before. I had sat in the very back of the room during every session, terrified to raise my placard. After that conference, I honestly did not see the appeal of MUN. My fear of failure and embarrassment overruled my ability to try something new at that moment, and didn't allow me to enjoy the activity that now, two years later, I have come to cherish so deeply.

Over the next year, I finally got it. I understood why people did MUN. The adrenaline, the energy, the shared passion over what would have elsewhere been a mundane topic. During that year, I found my two 'specialisations'. Crisis taught me how to love MUN, how to put passion and energy into a speech, how to not fear speaking out. Press taught me what victory felt like, yet it also demonstrated to me firsthand how failure was simply a part of growth. In January HMUN taught me that an award is never the most rewarding part of a conference. I left Boston with a Best Delegate award, yet it was by far not the best part of the experience. The people of that moment are worth more than anything else I could possibly imagine; and the best victories in MUN are those you can cherish with friends, those which you can celebrate with all those who you were in committee with, those which are backed by hours of unforgettable memories and irreplaceable experiences.

For this conference, I hope each and every one of you may find those memories. SSMUN, in my mind, is about the people. It is about diplomacy, argumentation, negotiation and teamwork, yes, but through it all none of this would be able to be accomplished without the willpower and collaboration of people. So I hope you all put in your best effort, both into productive debate and into enjoying every moment you have.

I cannot wait to see you all in September! To get to see how every one of you develops as a delegate through every session, and see the passion and care we've placed into the conference pay off in the experience of all those who will get to see our work.

Take advantage of the moment, and most of all, have fun :)

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Letter from the Chair

Dear Delegates,

Welcome to the WHO committee for this year's edition of SSMUN! I am thrilled to be your committee director and it is with great responsibility that I take on this role. As stated by the topic, we will be discussing the ethical implications of genome editing and its consequences on one's health which is an extremely relevant subject to today's world of medicine and human evolution as we know it. I hope for the debate to be an enjoyable learning experience for you all and for your interest in scientific topics to extend beyond our brief encounter.

My journey which has allowed me to be your chair has been one of many conferences and years. I joined MUN as a shy and nervous girl, fresh into secondary school who could not possibly fathom speaking to large crowds such as that of an MUN committee. However, with time, I slowly got more confidence in my skills and with the encouragement of those around me. With time, I learned that the magic of MUN lies in what you gain as a person and the experiences it allows you to have. I have been able to meet new people, travel to other countries and develop / improve skills I would never have gained otherwise. So, if this is your 1st or 100th MUN, never forget that there is always something new to learn and that there is always room for improvement.

On a more serious note, genome editing in itself is already a hard subject to approach, considering all of its implications and the possible outcomes it could lead to. However, it is the topic's complexity that will lead to great debate with non-stopping shifts and contrasting policies. Before approaching the debate, I urge you to take a step back and consider the importance of the topic in a greater context. It is often that we lose ourselves in what surrounds us that we forget the greater implications of our actions. This will help take your debate to the next level as your proposals and policies extend that which is in front of you and extends to the world in which we live, touching communities alien to that of the conventional and having a bigger impact on humans across the globe. I want to emphasise that we all live in the same world together and that the actions of one can affect the lives of many. With that, I will let you explore the ethical implications of genome editing context and to consider varying points of views and the way these people would be affected.

Furthermore, I would like to highlight that while MUN can be extremely competitive and you can feel pressured to win an award, that is not the point of MUN. MUN should be a place where you can have fun, make friends, and learn about issues of global importance. I want you to remember that even if you do not win an award, you will have taken home new knowledge, new skills and even some new friends. Thus, I encourage you to make the most out of this conference and to try to make it as enjoyable as possible because there can be many MUNs in the future but what you make of them will always be up to you. So, enjoy, have fun and embrace this new challenge. I cannot wait to finally meet you all.

Sincerely,

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History of the Committee

The World Health Organization (WHO) is the United Nations special agency dedicated to global health and safety, established on April 7, 1948, which is celebrated annually as World Health Day. The first World Health Assembly was held in Geneva, Switzerland, with delegations from 53 of the 55 member states.

Currently the WHO does not have permanent members in the same sense as the United Nations Security Council. Instead, it has 194 member states, which are part of the WHO General Assembly that meet annually during May. All member states have equal representation in the decision making World Health Assembly. Voting is usually made by consensus, yet when voting is required each member state gets one vote. Most decisions are made by a simple majority, but important questions may require a two-thirds majority. Moreover the Executive Board is composed of 34 technically qualified members elected for three-year terms. They meet at least twice a year, during May and January.

Since its ratification, WHO representatives and employees have worked toward the broad goal of ensuring the highest level “physical, mental, and social well-being with an operating budget of over $4 billion USD. Additionally they strive to reach their triple billion targets as their ultimate goal:

- Target: 1 billion more people benefitting from universal health coverage without financial hardship
- Target: 1 billion more people better protected from health emergencies
- Target: 1 billion more people enjoying better health and well-being

This is hoped to be done by 2025.

Headquartered in Geneva, WHO operates through its 6 regional offices, 150 country offices, and 10 other locations worldwide. They provide technical guidance, mobilise resources, and support member states in their efforts to contain and manage health crises. They've helped mitigate, from emerging epidemics such as COVID-19 and Zika to the persistent threat of communicable diseases including HIV, malaria and tuberculosis and chronic diseases such as diabetes, heart disease and cancer.

During the COVID19 pandemic WHO created guidelines to minimise the number of cases and prevent the virus from spreading, frequently and consistently offering updates on the number of international cases and the precautions taken by different countries.

Figure 1. Meeting of WHO’s Executive Board in its 152nd session at the beginning of previous year.

Introduction to the Topic

Genome editing is a method for making specific changes to the DNA of a cell or organism. It can be used to add, remove or alter DNA in the genome. Human genome editing technologies can be used on somatic cells (non-heritable), germline cells (that are not used for reproduction) and germline cells (that are used for reproduction).

Ethics is a salient component in the field of medicine. One main ethical issue is the determination of human nature. It is arguable that any genetic interference that could change human nature should be morally forbidden since it alters the very essence of human nature. This practice would also run the risk of designating humans to a predetermined life, which consequently adds restrictions on freedom of choice.

Few Definitions:

- Somatic human genome editing**:** Edit disease-causing DNA within the body's non-reproductive cells, known as somatic cells. This type of edit only affects the individuals where the edits are performed.
- Heritable human genome editing: When alterations to genomic DNA are made in gametes (eggs or sperm) or any cells that give rise to gametes. These edits are passed on from one generation to the next.
- Ethics: moral principles that govern a person's behaviour or the conduct of an activity.

History and Research of Genome Editing:

Genome editing attempts began in the mid-twentieth century, when researchers found that the sequence of bases in DNA is mostly passed hereditarily, meaning that small changes in the sequence can make offspring be healthy or carry disease. This led to the understanding that identifying “molecular mistakes” that cause genetic diseases would make scientists able to treat and fix them, which was the fundamental idea behind gene therapy, a wildly popular treatment in molecular genetics in the 1980´s. However, the development of technology for gene therapy was difficult and limited, even though most of early progress did not focus on correcting genetic mistakes, like science today, but rather focused on minimising their consequences. For example, these would be done by providing a functional copy of the mutated gene, which would be either inserted into the genome or kept as an extrachromosomal unit (outside the genome). This process, however, proved to not always be effective for all conditions and too complicated.

During this time, scientists Muller and Auerbach, in search of another genome editing process, discovered that the rate of mutagenesis (production of genetic mutation) could be enhanced with radiation or chemical treatment. Muller discovered that “high temperatures” have the ability to mutate genes and experimented with the use of x-rays and fruit flies, noting phylogenetic changes when these suffered a high dose of the radiation. These however, like transposon insertions later on, produced changes in random sites of the genome, which, for the most part, defeated its purpose and thus proved the scientists mostly unsuccessful.

Eventually, scientists discovered that to actually fix genetic errors, they needed to be able to break DNA double-strands exactly where they wanted to among the three billion base pairs that make up the human genome. Once formed, the double-strand break might be effectively repaired by the cell by substituting the "good" sequence for the "bad" sequence according to a template. It was not simple, nevertheless, to make the first break inside the genome at the exact necessary spot and nowhere else.

Before CRISPR-Cas9, there were two other processes that took place when gene editing: one based on zinc finger nucleases (ZFNs) and the other based on transcription activator-like effector nucleases (TALENs). These processes, although effective, were very time-consuming and complicated.

It was then, in 2012 that CRISPR-Cas9 was discovered by Jennifer Doudna and Emmanuelle Charpentier, and it revolutionised the world of gene editing. The acronym 'CRISPR' refers to '***c***lustered ***r***egularly ***i***nterspaced ***s***hort ***p***alindromic ***r***epeats', which are formed in most bacterial genomes, and it was derived from the adaptive immune systems of bacteria. This technology uses RNA-DNA binding, instead of protein-DNA binding, leading to a simplification of the design, enabling application to a greater range of target sequences. Transcription of the CRISPR region produces small 'guide RNAs' which attach to their corresponding targets, which presents major specificity in the breaking of DNA. Doudna and Charpentier won a Nobel Prize for their discovery and research of CRISPR-Cas9 in 2020. Their grand recognition demonstrates the ever growing relevance of genetic engineering, and its prospering future.

Figure 2. Jennifer Doudna and Emmanuelle Charpentier after receiving their Nobel Prizes in chemistry, 2020.

Genome Editing in the Present:

Following CRISPR-Cas9's discovery, a further technical advance came in 2015, when Chinese-American scientist Feng Zhang and other researchers reported the use of Cpf-1, rather than Cas9, as the nuclease paired with CRISPR to achieve gene editing. The use of this microbial nuclease made for a simpler, more straightforward approach to genetic modification. However, CRISPR-Cas9 is the process used the most in science, at the moment, its versatility proven by the variety of ways it has been used. For example, it has been applied to early embryos, to genetically modify the organism; it has been injected into the bloodstream of animals for gene editing in subsets of tissues. As shown, CRISPR-Cas9 has been used to modify the genomes of different organisms, but it has also been used to develop methods to destroy antibiotic-resistant bacteria, by modifying the genomes of bacteriophages. Moreover, this system has also led the way to the creation of animal models for diseases present in humans and the removal of HIV from infected cells.

CRISPR-Cas9 is used today as a successful way of correcting genetic errors, resulting in the rescue from disease of many organisms. However, there is a drastic divide between nations due to the acceptance and tolerance of the ethical implications that come with gene editing. Many countries like

Switzerland, Belarus, Canada and Sweden believe that it is a completely unethical practice, and should not be performed on humans until it is deemed completely safe. On the other hand, China, India, the United States, United Kingdom, and others do accept gene editing, and have announced their active practice of it.

Regulation Status	Rating
Determined: No Unique Regulations*	10
Lightly Regulated	8
Proposed: No Unique Regulations†	6
Ongoing Research, Regulations In Development	5
Highly Regulated	4
Mostly Prohibited	2
Limited Research, No Clear Regulations	1
Prohibited	0

Country / Region	Therapeutic	Germline	Human Rating
Japan	8	8	8
Russia	10	5	7.5
Ukraine	10	5	7.5
China	8	4	6
Israel	8	2	5
UK	4	4	4
Mexico	8	0	4
Argentina	5	1	3
Chile	4	1	2.5
Brazil	4	0	2
Canada	4	0	2
Australia	4	0	2
US	4	0	2
New Zealand	4	0	2
India	4	0	2
EU	4	0	2
Central America	1	1	1
Paraguay	1	1	1
Uruguay	1	1	1

Figure 3 and Figure 4. Tables showing the genome editing regulation status of different countries as of 2024 and the key to understanding the table.

Innovation in gene editing occurs often, and since the first demonstration of CRISPR-based editing, the field has evolved at a striking pace. The enhancement of these technologies have increased the versatility and precision of these tools and minimised negative consequences. However, issues regarding its safety persist, given that specific targeting is still not perfected and there are potential genotoxic effects due to this. Concerns about this have prompted the development of a "second generation" of CRISPR, which would continue genome editing efforts without relying on DNA double strand breaks (DSBs). The use of this new technology would lead to a much more tailored approach to gene editing, as there would be particular modules suited for specific modifications needed. Nevertheless, although these tools have contributed to the many social and scientific restraints of CRISPR, they are still limited in specificity and delivery, making many unsure of their safety if used on organisms.

However, gene editing is still and always has been a controversial matter, both socially and scientifically. Since the roots of research on this topic, its ethical value has been debated on, often ending in its practice being banned, or decreased. But this is not without reason. For example, the actual safety of these practices can be questioned, as there have been vast recorded cases of negative long term effects or unintended consequences on those treated. On the other hand there is also the issue of equity: is it fair to accept gene editing for health benefits if it won't be available to everyone? Economic differentiations could cause greater health inequalities between the wealthy and poor, forming a larger separation in society. Furthermore, the discussion that the future use of such an attainable technology will always be morally correct, is hard to believe. It is probable that genome editing could also be used for human enhancement, in the future, and the potential to select specific traits for unborn babies raises ethical concerns about parental and societal expectations. Due to this, there is a fear that gene editing will lead to a new form of eugenics, and that once again, some genes will be deemed superior, creating more discrimination and intolerance.

Although gene editing has enormous potential to advance medical science and enhance human health, there are also substantial ethical concerns. It takes careful thought, public participation, and strict regulation to handle these complicated challenges in an ethical manner.

Impacts of Genome editing:

The recent application of tools, such as CRISPR-Cas9, to edit the human genome with the intention of treating or preventing disease and the gaps in our scientific understanding raise ethical issues that have highlighted the need for robust oversight in this area. Current, potential and speculative human genome editing research will go beyond national borders, as will possible societal effects. This applies equally to somatic, germline and heritable human genome editing, although the latter is generally considered to be of greater ethical concern. Therefore, governance for this technology is needed at national and transnational levels. Some of the necessary governance structures and processes already exist. These may need to be reinforced or amended; where such structures and processes are lacking, gaps need to be filled.

Application of heritable human genome editing is likely to be a much more limited activity in the coming years. To help ensure heritable human genome editing does not proceed prematurely to clinical trials, the WHO Expert Advisory Committee recommended, and the WHO Director-General subsequently made, a policy statement in July 2019 clarifying that "it would be irresponsible at this time for anyone to proceed with clinical applications of human germline genome editing."

Past Actions

The evolution of gene editing has mostly happened in the past two decades, as this issue has only garnered the attention of the international community until recently, having held the First international summit on Human Gene editing in 2015. This summit, held from the 1st to the 3rd of December of 2015 in Washington D.C, United States, was the first attempt at discussing the recent development in gene editing and the possible implications: social, ethical and legal of human genome editing technologies. This meeting co*nclu*ded with a consensus that gene editing must be approached with caution and highlighted the need for a control over the technique. Additionally, they agreed that somatic cells editing could be evaluated for gene therapy but that the editing of germline cells would be irresponsible until safety issues were resolved. Like the rest, this was also a commonly held belief.

Figure 5. Photo of meeting participants, in the 2015 global summit,left to right: Jennifer Doudna, Bill Skarnes, Feng Zhang, J. Keith Joung, Jonathan Weissman, Jin-Soo Kim, Emmanuelle Carpenter, and Maria Jasin.

This summit was then followed by the Second International Summit on Human Genome Editing of 2018. Held from the 27-29th of November in 2018 at the University of Hong Kong, China. Before this meeting had occurred, the controversial announcement of a Chinese doctor who claimed to have altered the DNA of embryos of twin sisters, Lulu and Nana, using CRISPR - Cas9. This revelation had caused uproar in society, especially the scientific community as an event that went against ethics and lacked morality. Thus, the importance of this second summit was immense. This event had over 500 participants and had more than 80,000 viewers on the live broadcast on the university's channel. Unlike the first summit, which went over basic considerations and the overall situation, this one was much more specific in terms of discussion and outcomes. This was because of the rapid nature at which findings occur in this field, considering there were many advancements between the First summit in 2015 and this one of 2018. Here, they emphasised the need for collaboration in order to design regulatory frameworks that could be in command of genome editing. Nonetheless, much was discussed about the possible applications of genome editing for genetic diseases and the possible applications in the research and development of human embryos. In conclusion, the conference

addressed the recent advances done by scientists in regards with gene editing and emphasised the dire need for guidelines.

Lastly, the Third International Summit on Human Genome Editing was only held last year (2023) at the Francis Crick Institute in London, England. This conference took place from the 6-8 of March of that year. Much like the two previous summits, the topic centred around new developments, advancements in research, and the need for open dialogue and collaboration on the safe and ethical application of gene editing of humans. A large focus was placed on somatic cell editing and the discussion to include the editing of heritable human genome in research was also broadened. Moreover, the summit also talked about the accessibility of this treatment and how it could be made equitable among society. They pointed out that in order to benefit human health equally, the therapies based on genome editing needed to be available and affordable. So not only did the discussion talk about the complexities of the research and treatments they also talked about the human aspects of these as well as their ethical implications. The Third summit was the englobing of all that had been discussed in the past in addition to all that was discussed in this last session.

Together, all three summits, 2015, 2018, and 2023, have finally set the foundation for international coordination of the governance and regulation of human genome editing; a process that dates back all the way to 1975 where a meeting was held when gene editing technologies were first developed.

Figure 6. photo of infamous Dr. Jiankui He speaking about his work at the Second International Summit on Human Genome Editing

Furthermore, the World Health Organization established a global, multi-disciplinary Expert Advisory Committee to develop standards for human genome editing in early 2019. This committee was the result of the controversy regarding the Chinese scientist and the answer to the call for international collaboration. The committee with its 18 members is tasked to advise and make recommendations for regional, national and global governing bodies in how to address and legalise human genome editing.

Additionally, the committee reviews existing proposals for governance, advancements in research and their applications, as well as considers societal attitudes towards the usage of these new technologies. It is also responsible for promoting trustworthy and transparent practices and of finding appropriate evaluations that need to be done to any new work or discovery for it to be approved.

In July of 2021 the committee published a governance framework for human genome editing and recommendations on human genome editing. This framework can be used by other countries to develop their own regulations. The framework outlined five key areas of gene editing and provided nine key recommendations for the oversight of the issue. The five key areas are:

1. **Somatic Cell Editing Post-Birth:** this involves making changes to the DNA of somatic (non-reproductive) cells in individuals after they have been born. This area is viewed as more ethically acceptable for therapeutic purposes.
2. **In-Utero Somatic Cell Editing:** this area focuses on editing somatic cells in a foetus during pregnancy. This area is semi-permissible due to the implications and potential risks of this type of editing, requiring careful consideration.
3. **Germline Editing**: this involves modifications to germline cells (sperm, eggs, or embryos) that can be inherited by future generations. This area is largely frowned upon and the committee strongly suggested against it.
4. **Gene Expression Modifications:** this area pertains to changes that affect how genes are expressed without altering the underlying DNA sequence. This area requires careful ethical consideration before being used.
5. **Enhancements Beyond Disease Treatment**: this involves editing genes not solely for therapeutic purposes but to enhance traits or abilities. This area raises substantial societal and ethical questions.

The nine key recommendations given by the committee are:

1. **WHO Leadership**: The WHO should take a leading role in establishing moral and scientific guidelines for genome editing, including developing an ethics statement that addresses equitable access to technologies.
2. **Global Governance Framework**: Countries should work collaboratively to create a governance framework that incorporates key values and principles, such as inclusiveness, social justice, and global health equity.
3. **International Collaboration**: The WHO should facilitate international cooperation to ensure that genome editing technologies are shared equitably, especially with low-income countries, to prevent widening health disparities.
4. **Registry for Clinical Trials**: Establish a registry for all clinical trials involving human genome editing to promote transparency and accountability in research practices.
5. **Discouragement of Unregulated Research**: Strongly discourage any research or clinical applications that may lead to the birth of gene-edited humans without proper oversight and ethical considerations.
6. **Addressing Rogue Practices**: Implement measures to prevent rogue clinics from exploiting patients through unregulated gene editing practices, particularly in countries with lax regulations.
7. **Public Engagement and Education**: Promote public dialogue and education about the implications of gene editing to ensure informed consent and societal understanding of the technologies.

8. **Monitoring and Evaluation**: Establish mechanisms for ongoing monitoring and evaluation of gene editing practices to ensure compliance with ethical standards and public health considerations.
9. **Whistleblower Protections**: Create a system for reporting unethical or unsafe gene editing practices, ensuring that those who raise concerns are protected from retaliation.

Additional outputs of the Committee include a global registry on human genome editing, a policy statement by the Director-General on germline human genome editing and the reports of the Committee's work. This is an overall view of the work done by the committee on its second session and other works it is responsible for. In its completion, it shows the action undertaken by the World Health Organisation and the importance of the issue on a global scale.

Case Studies

Case Study 1: the United Kingdom

Unlike most nations around the world, the United Kingdom has taken many measures to legislate the conditions under which gene editing is or is not allowed. They are considered to be relatively open in terms of allowing gene editing. The development of their laws and guidelines has been underway for over 30 years.

In 1990, the Human Fertilisation and Embryology Act was passed. This act established the Human Fertilisation and Embryology Authority (HFEA) which is currently responsible for the monitoring of fertility centres to ensure best quality treatment and regulates human embryo research. Furthermore, the act made the editing of human embryos for reproductive purposes illegal but allows for the research on early embryos under regulated conditions which require a licence.

Moreover, a legislation allowing for Mitochondrial Donation deemed as the Human Fertilisation and Embryology Regulation came into order in 2015. This legislation allows for the editing of certain mitochondrial DNA defects without classifying the resulting embryos as genetically modified organisms (GMOs). And more recently, in 2023, the Genetic Technology (Precision Breeding) Act was passed. This act allows for the commercialisation of animals and plants that have been genetically modified, classifying them as ‘precision bred organisms’ (PBO). Not only this, but a secondary legislation that follows this 2023 act is currently being drafted to make the framework for PBOs even clearer. These recent efforts are only part of the work that is currently being done by policy makers to legislate gene editing in order to further allow its practice in the United Kingdom.

Additionally, the citizens are also asking for a more permissible change of laws to allow the editing of genomes. Most clearly, a UK citizens jury that met together in 2022, met together over a series of days to discuss whether the editing of human embryos for serious genetic conditions would be legislated. At the end of their conference, with a 17 out of 21 vote in favour, they asked the government to reconsider the laws that prohibit the editing of genes of embryos to cure these genetic disorders. For instance, on the 16th of November of 2023, the United Kingdom became the first country in the world to approve gene editing as a potential cure for two inherited blood diseases. The therapy, produced by Vertex pharmaceuticals, is based on CRISPR gene editing and has currently undergone two global clinical trials, which led to its approval by the Medicines and Healthcare products Regulatory Agency (MHRA). Casgevy (exagamglogene autotemcel) is the name of this innovative therapy for the treatment of sickle cell disease and beta thalassemia, both genetic conditions caused by errors in the expression of haemoglobin genes. Despite needing to pass a final test in order to be offered to patients, this is a major step forward for the future of genetic engineering and gene editing advancements. This new treatment would provide those who suffer from these conditions a better quality of life as they show promising success rates. This is another very clear example of the work being done by the British government on the topic.

Figure 7. a scientist at Vertex Pharmaceuticals working in her laboratory in San Diego.

However, despite the United Kingdom's seemling open attitude, this is not true for all of their citizens. The Anscombe Bioethics Centre, a catholic bioethics institute in the UK, argues that germline editing is "destructive" and should not be allowed if not for extremely limited circumstances. Even more so, some acts such as the 2023 Genetic Technology (Precision Breeding) Act have not been equally implemented everywhere. While England remains freer, the liberalisation does not apply to Scotland, Wales and Northern Ireland. This is a clear example of the deep intricacies of the issues.

Overall, the United Kingdom has a wide variety of opinions and a range of measures and laws in place regarding the issue at hand. Yet, it is one of few that has given time to discuss the issue with policy makers and is currently scrutinising the topic, putting it into the spotlight to analyse the possible benefits and/or risks that could be associated with increasing regulations or liberalising the practice even more.

Case study 2: Germany

During the Nazi regime (1933 '1945) the concept of eugenics was heavily promoted and used to justify the inhumane practices used to improve the genetic quality of the German population. They believed the Aryan race was superior and sought to eliminate those they deemed as genetically inferior. Including Jews, Romani people and disabled individuals. The eugenics policies were implemented in several ways. Even though the advanced genetic engineering technology such as CRISPR were not developed, the regime still found ways to exploit genetic science. One of the first actions taken was the Law for the Prevention of Hereditarily Diseased Offspring which mandated the forced sterilisation of individuals with hereditary conditions. Additionally Josefe Mengel and a notorious SS physician conducted experiments on twins to study genetic traits and hereditary diseases by inhumane procedures, sewing twins together, infecting them with diseases etc.

Due to its past and historical misuse, Germany has taken a careful approach to human genome editing by maintaining a strong commitment to the ethical principles. The German Ethics Council was founded to offer moral guidelines on matters of science and technology and it is a major influence on

the development of genome editing regulations. GSimilarly The Embryo Protection Act of 1990 is especially important since it restricts possible genetic alterations and tightly controls the use of human embryos in research. Germany's cautious attitude is reflected in this act, which emphasises the moral and ethical issues surrounding the manipulation of human embryos.

Germany's Embryo Protection Act section 5 states that:
(1) Anyone who artificially alters the genetic information of a human germ line cell shall be punished with imprisonment of up to five years or a fine.
(2) The same shall apply to anyone who uses a human germ cell with artificially altered genetic information for the purpose of fertilisation
(3) Any attempt shall be punishable.
(4) Paragraph 1 shall not apply to:

1. an artificial alteration of the genetic information of a germ cell located outside the body, if any use of it for fertilisation has been rule out,
2. an artificial alteration of the genetic information of a different body germline cell that has been removed from a dead embryo, from a human being or from a deceased person, if it has been ruled out that a. the cell will be transferred to an embryo, foetus or human being, or b. a germ cell will originate from it, as well as
3. an inoculation, radiation, chemotherapeutic or other treatment by which an alteration of the genetic information of germ line cells is not intended.

In Germany there are many ethical issues surrounding the alteration of human germlines which are a primary concern. For instance Germline editing has the potential to improve quality of life for future generations and eradicate hereditary diseases, yet there is still strong ethical opposition because of the possibility of unknown consequences. Two significant ethical concerns are the irreversibility of these modifications and the consent of future generations. Consequently, Germany continues to uphold a de facto prohibition on the use of human germline editing for reproductive purposes, underscoring its dedication to ethical caution and safeguarding future generations.

Germany also clearly distinguishes between the use of genome editing for enhancement and therapy. According to EPA Section 5.4 No. 1 and 2, using germline cells and germ cells for the scientific purpose of intentionally altering their genetic characteristics is permissible under certain conditions. This research is permissible if the researchers ensure that the genetically modified germ cells are not used for fertilisation, that the altered germline cells are not transferred to an embryo, foetus, or human, or that no germ cells arise from them. Nevertheless concerns about social fairness as well as the possibility of developing a genetic underclass is maintained.

The global controversy surrounding the 2018 CRISPR-baby scandal, in which a Chinese scientist He Jiankui announced the birth of genetically edited babies, further emphasised the ethical challenges associated with genome editing. This scandal was condemned by Germany and highlighted the need for stricter international regulatory frameworks and ethical guidelines.

Bloc Positions

In light of the complex nature of the issue, delegates must try to find a suitable manner to approach the issue at hand. The different perspectives, associated risks and possible benefits should all be considered when proposing solutions and guidelines. Furthermore, each country should carefully consider its own internal policy and take measures that align to the best interests of their own nations. The committee should aim to divide themselves through the different approaches they hold towards the topic such as countries that look for restrictive measures towards the editing of genomes and those who look for an increased and more open practice of gene editing.

Nonetheless, other criteria for the separation of blocks, that is deemed reasonable, would also be accepted at the time of the committee. We would encourage the division of the committee in two main blocks but would not frown upon an extra block if the committee requires it on the day. We trust each one of you will take this into consideration for the duration of our conference.

QARMA's

QARMAs or *questions a resolution must answer* are there to guide delegates in their solution. They should be used as a guideline but not should no be limited to the following questions:

1. Should there be a uniform international guideline to approach gene editing? If so, who would be responsible for designing it and how could different perspectives be considered and included.

2. Are there any circumstances where the editing of genomes of organisms is justified? If so, which one would they be?

3. Under which purposes should the editing of germline cells (reproductive cells that are heritable) become allowed, if any?

4. What can be done to ensure that gene editing remains controlled and does not become free to each individual's judgement?

5. Which factors should be considered when drafting laws and motions to restrict or allow the editing of genes?

6. What are the potential social impacts of creating genetically modified humans (and organisms), and how should they be managed?

Position Paper Guidelines

A position paper is a one-page document that will need to be presented before the conference, the requirements of it are as follows.

Font: Times New Romans (size 11)
Margins (centimetres): 2.54 from all sides
Line Spacing: 1.15
Heading: Committee's name, topic, delegate's name, delegation, and allocation.

First paragraph: Introduction to your nation's perspective on the topic and should not be confused with an introduction to the topic. How does your nation see the issue discussed at hand?
Second paragraph: Past actions which relate to the topic and have been taken either by your country nationally, or with the UN. What effects did these have on the conflict in general?
Third paragraph: Solutions to the problem, more than one of these are encouraged to fully encompass the issue presented. Remember to remain within policy and within the scope of what your country can do.
Bibliography: The sources used to produce this position paper should be presented in MLA9 citation format. If a delegate fails to present sources for their position paper, it will be assumed to be plagiarised work and they will become ineligible for awards.

Deadline: All position papers must be sent in pdf form to who@sansilvestre.edu.pe before 11:59 pm the 30th of August, 2024.

Eligibility for awards: Position papers will be used as a way for the chair to ensure your participation previous to the conference. For such, position papers must be submitted before the deadline for the delegate to be eligible for an award. However, they will not be a factor which contributes when choosing awards for your participation during the conference.

A note on artificial intelligence usage: We know in recent times many tools have been devised to automate tasks such as the development of literary texts. It would be ignorant to completely prohibit the use of such devices as they are tools created for the enhancement of human intelligence. For such, we believe that many times these devices can be used to improve your work, and we encourage the **healthy, moderated,** and **smart** usage of these aids. Let it be known, that although AI can be of big help for redaction purposes, **it should not be the sole source of your research** due to the obvious constraints that it possesses, which included but are not limited to; bias, lack of data from recent years, and false information. Furthermore, it is important to note that we **completely prohibit** the use of, for example, Chat GPT **during the conference** to create speeches at real-time speed. Our chairs will make sure to value your improvisation and public speaking skills over a perfectly redacted speech made by an AI tool. With this in mind, make sure to research thoroughly, find different perspectives and sources to devise a proper position paper.

If you have any doubts about the policies in more detail please email your chair or the Secretary-General lxu86@sansilvestre.edu.pe

Closing Remarks

As we conclude our discussions on human genome editing, it is essential to recognize the transformative potential that this technology holds for our societies. As aspiring leaders and representatives of your nations, your commitment, attention, and perseverance will be crucial in navigating the complexities of this field. We are at a pivotal moment, faced with profound ethical, social, and scientific challenges that demand our collective wisdom and action.
Throughout this conference, we have acknowledged the significant implications that human genome editing can have on individuals, families, and communities worldwide. It is our responsibility to engage in thoughtful dialogue and adopt a comprehensive approach to harness the benefits of this technology while safeguarding against its risks. Just as we address pressing public health concerns, we must also advocate for responsible governance, equitable access, and ethical considerations in the application of genome editing.

Collaboration and integrity among Member States will be paramount as we work together to establish robust frameworks that ensure the safe and ethical use of gene editing technologies. By pooling our resources and collective efforts, we can build a future that not only embraces innovation but also prioritises the well-being of all individuals.

Let us embark on this journey of diplomacy and collective action, united in our determination to make a positive impact on the lives of those affected by genetic conditions and to ensure that the advancements in human genome editing serve the greater good. Together, we can shape a healthier, more equitable future for all.

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