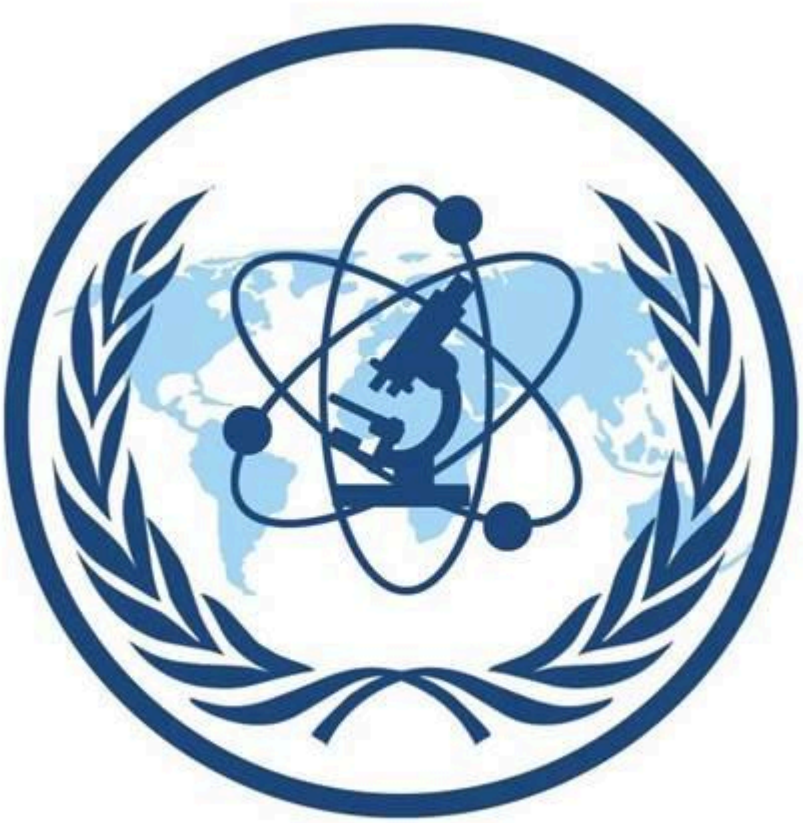

MUNIKL'26 Commission on Science and Technology for Development (CSTD)

Agenda item: Discussing the ethical and legal dimensions of therapeutic and human cloning and utilizing these methods in biomedical research

Under Secretary General- Selen Bostancı

Academic Assistant- Eylül Dur

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2-Letter from the Secretary General

Dear Delegates, It is a great pleasure for me to welcome you all to the fourth annual session of Izmir Kız High School Model United Nations Conference. I am Ecrin Tügen, and I will be serving as your Secretary General for this conference. I am here to ensure you have an unforgettable experience in the best way possible.

During the conference, you will not only engage in diplomatic discussions, but you will also develop your leadership and communication skills, gain a deeper understanding of international issues, learn about the policies of other countries, practice crisis management, and socialize with delegates from other schools who may become your close friends. Briefly, this conference will offer you far more than you expect.

Of course, a great conference does not come together easily. I would like to extend my heartfelt thanks to my Executive, Organization, and Academic Teams, who have worked constantly and intensively throughout the entire process. I am certain that this conference will be amazing because of their hard work.

MUNIKL’26 has been my biggest dream for years; finally, my dream comes true with your interest and participation. I cannot fully express how grateful I am to all of you for being part of this journey. Wishing you a beneficial, enjoyable, and truly unforgettable conference experience.

Warm Regards,

Ecrin Tügen

Secretary General, MUNIKL'26

3-Letter from the Under Secretary General

Honorable Delegates,

This is Selen Bostancı, and I wanted to start by stating how delighted I am to work in this conference, with this committee, and each of you. Welcome to MUNIKL'26.

I'm an 11th grader at İzmir Özel Türk Koleji, and I've been attending conferences for a long time now.

This study guide is written by my Dear Academic Assistant and me to guide you during the upcoming conference and clear things up for you to work efficiently.

My best wishes for each of you to have the best conference ever and learn things that will benefit you in the long term.

If you have any questions or concerns, please do not hesitate to contact me. See you all.

Best Regards,

Selen Bostancı

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4-Letter from the Academic Assistant

Esteemed delegates,

My name is Eylül Dur, and I am delighted to serve as your Academic Assistant during the upcoming three days.

I am a junior at Emlakbank Süleyman Demirel Anatolian High School, and it is currently my exam week, so in case there are any mistakes in the study guide, I am extremely sorry in advance.

My only request is that you read and study this guide thoroughly, as it will be your main source for the committee. I wish you all an amazing experience.

Please do not hesitate to ask us any questions.

Best Regards,

Eylül Dur

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5- Introduction to the Committee

The United Nations Commission on Science and Technology for Development(CSTD), established in 1992, is a functional commission of the Economic and Social Council(ECOSOC) that acts as the UN's main organ for discussing how science, technology, and innovation(STI) can be used to achieve sustainable development. Supported by the United Nations Conference on Trade and Development(UNCTAD) as its secretariat, the CSTD consists of 43 member states tasked with providing high-level policy guidance on critical problems such as the digital divide, technology transfer to developing nations, and the ethical implications of emerging fields like biotechnology and artificial intelligence(AI). This is done in order to enable those organs to guide the future work of the UN, develop common policies, and agree on appropriate actions. The CSTD is also an open platform where proposals, ideas, experiences, cases, and intellectual thought can be channeled toward making a policy impact. It facilitates concrete collaborations between member states, Non-Governmental Organizations (NGOs), and actors in the science, technology, and development space.

6- Introduction to the Agenda Item

The 21st century has reached a definitive moment in which the rapid advancement of biotechnology challenges our central understanding of human identity and dignity. Within the CSTD, the discussion surrounding cloning shifts from scientific usefulness to a complex web of ethical and legal dilemmas. Therapeutic cloning has great potential in regenerative medicine, as it can help treat chronic and previously incurable diseases through stem cell research.However, it also raises ethical concerns due to the use of embryos. This creates a global legal view characterized by disintegration, where member states must balance the duty to relieve suffering with the security of universal human rights. As the international committee directs this boundary, the committee faces the dual challenge of preventing reproductive human cloning, widely viewed as a violation of human purity, while ensuring that the benefits of biomedical research are developed ethically and shared equally across all nations, regardless of their developmental status.

7- Relations of UNCTAD and CSTD

UNCTAD stands for the United Nations Conference on Trade and Development; it is the main UN agency working to help developing nations cope with the challenges of participating in the international economic order. Created in 1964, the fundamental goal of UNCTAD is to assist nations in integrating themselves into the global trading environment in a manner that would favor their development interests. Instead of simply facilitating trade, UNCTAD addresses issues such as debt, investment, and technology transfer that place developing countries at a disadvantage relative to developed nations.

The interaction between the CSTD and the UNCTAD results in a distinctive area of policy overlap where issues related to scientific ethics are linked to the broader field of macroeconomics on an international level. Although CSTD stands out as the main intergovernmental body where discussions on the ethical limits of biomedical research take place, the support of the CSTD is provided by the secretariat of UNCTAD, which analyses those innovations from the perspectives of trade, investments, and economic development. With regards to therapeutic cloning, this translates into the fact that the committee not only concerns itself with the biological but also the economic dimension of this issue. Namely, the committee deals with the "Bio-Economy" aspect in terms of the way the intellectual property regimes, technology transfer, and FDI can affect the ability of one country to apply therapeutic cloning in its healthcare system.

8-Human Cloning History

Human cloning history spans over a century of biological research, moving from 19th-century embryonic studies to modern, ethically restricted research. While animal cloning, notably Dolly the sheep in 1996, proved the potential for somatic cell nuclear transfer, the successful reproductive cloning of humans has never been verified. The term “human cloning” is generally used to refer to artificial human cloning, which is the reproduction of human cells and tissue. It does not refer to the natural conception and delivery of identical twins. The possibilities of human cloning have raised controversies. These ethical concerns have prompted nations to pass laws regarding human cloning.

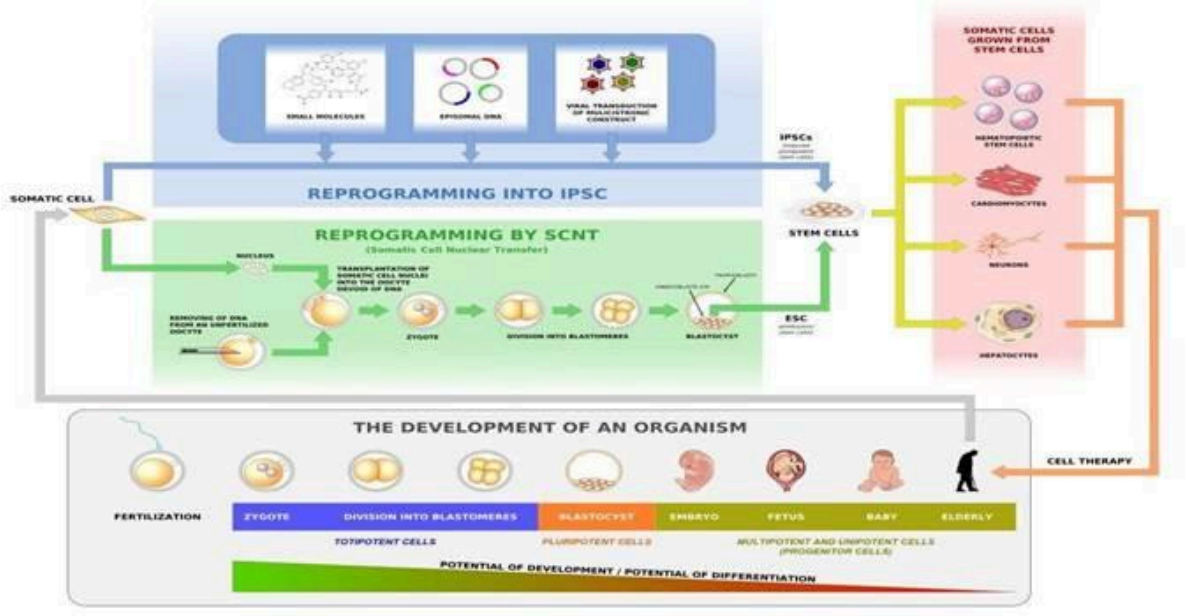


Diagram of the ways to reprogram cells along with the development of humans

-1885 (Driesch’s Sea Urchins): By shaking apart a two-celled sea urchin embryo, Driesch proved that each cell grew into a complete (though smaller) urchin. This debunked the idea that genetic information is "divided" as cells split, proving instead that every early cell contains a full instruction manual.

-1952 (Briggs & King’s Tadpoles): This was the first successful Somatic Cell Nuclear Transfer (SCNT). It showed that you could remove the nucleus from one cell and "reboot" it inside an egg. However, they found that as cells got older, they lost their ability to be cloned—a hurdle that wouldn't be cleared for decades.

-1996 (Dolly the Sheep): Dolly was the "impossible" success. She proved that a fully specialized adult cell (from a mammary gland) could be reverted back to an embryonic state. This meant cloning wasn't just for embryos; in theory, you could clone any living adult.

Two commonly discussed types of human cloning are *therapeutic* cloning and *reproductive* cloning.

-1998 (South Korean Claim): Although they didn't produce a baby, an experiment at KyungHee University showed that human cells could be fused and begin dividing. It shifted the conversation from "if" we could clone humans to "when," leading to a massive wave of global legislation to ban the practice.

-2002 (Cloneaid/Eve): This is remembered as one of the greatest scientific hoaxes. Because they refused to allow independent DNA testing, it turned the public and politicians sharply against cloning research, leading to stricter "blanket bans" that often hindered legitimate stem cell research.

-2007 (Therapeutic Success): Andrew French's team didn't want to make a person; they wanted to make patient-specific medicine. By creating cloned embryos, they proved we could potentially grow "perfect match" replacement tissues (like heart or nerve cells) that a patient's body wouldn't reject.

Therapeutic cloning would involve cloning cells from a human for use in medicine and transplants. It is an active area of research and is in medical practice around the world. Two common methods of therapeutic cloning that are being researched are somatic-cell nuclear transfer and (more recently) pluripotent stem cell induction.

Reproductive cloning would involve making an entire cloned human, including that person's DNA, instead of just specific cells or tissues.

9- Official UN Declaration Paper on Human Cloning, 2005

United Nations A/RES/59/280

General Assembly

Distr.: General
23 March 2005

Fifty-ninth session
Agenda item 150

Resolution adopted by the General Assembly on 8 March 2005

[*on the report of the Sixth Committee (A/59/516/Add.1)*]

59/280. United Nations Declaration on Human Cloning

The General Assembly,

Recalling its resolution 53/152 of 9 December 1998, by which it endorsed the Universal Declaration on the Human Genome and Human Rights,[1]

Approves the United Nations Declaration on Human Cloning annexed to the present resolution.

82nd plenary meeting
8 March 2005

Annex

United Nations Declaration on Human Cloning

The General Assembly,

Guided by the purposes and principles of the Charter of the United Nations,

Recalling the Universal Declaration on the Human Genome and Human Rights, adopted by the General Conference of the United Nations Educational, Scientific and Cultural Organization on 11 November 1997,[1] and in particular article 11 thereof, which states that practices which are contrary to human dignity, such as the reproductive cloning of human beings, shall not be permitted,

Recalling also its resolution 53/152 of 9 December 1998, by which it endorsed the Universal Declaration on the Human Genome and Human Rights,

Aware of the ethical concerns that certain applications of rapidly developing life sciences may raise with regard to human dignity, human rights and the fundamental freedoms of individuals,

Reaffirming that the application of life sciences should seek to offer relief from suffering and improve the health of individuals and humankind as a whole,

[1] United Nations Educational, Scientific and Cultural Organization, *Records of the General Conference, Twenty-ninth Session, Paris, 21 October-12 November 1997*, vol. 1: *Resolutions*, resolution 16.

Emphasizing that the promotion of scientific and technical progress in life sciences should be sought in a manner that safeguards respect for human rights and the benefit of all,

Mindful of the serious medical, physical, psychological and social dangers that human cloning may imply for the individuals involved, and also conscious of the need to prevent the exploitation of women,

Convinced of the urgency of preventing the potential dangers of human cloning to human dignity,

Solemnly declares the following:

(*a*) Member States are called upon to adopt all measures necessary to protect adequately human life in the application of life sciences;

(*b*) Member States are called upon to prohibit all forms of human cloning inasmuch as they are incompatible with human dignity and the protection of human life;

(*c*) Member States are further called upon to adopt the measures necessary to prohibit the application of genetic engineering techniques that may be contrary to human dignity;

(*d*) Member States are called upon to take measures to prevent the exploitation of women in the application of life sciences;

(*e*) Member States are also called upon to adopt and implement without delay national legislation to bring into effect paragraphs (*a*) to (*d*);

(*f*) Member States are further called upon, in their financing of medical research, including of life sciences, to take into account the pressing global issues such as HIV/AIDS, tuberculosis and malaria, which affect in particular the developing countries.

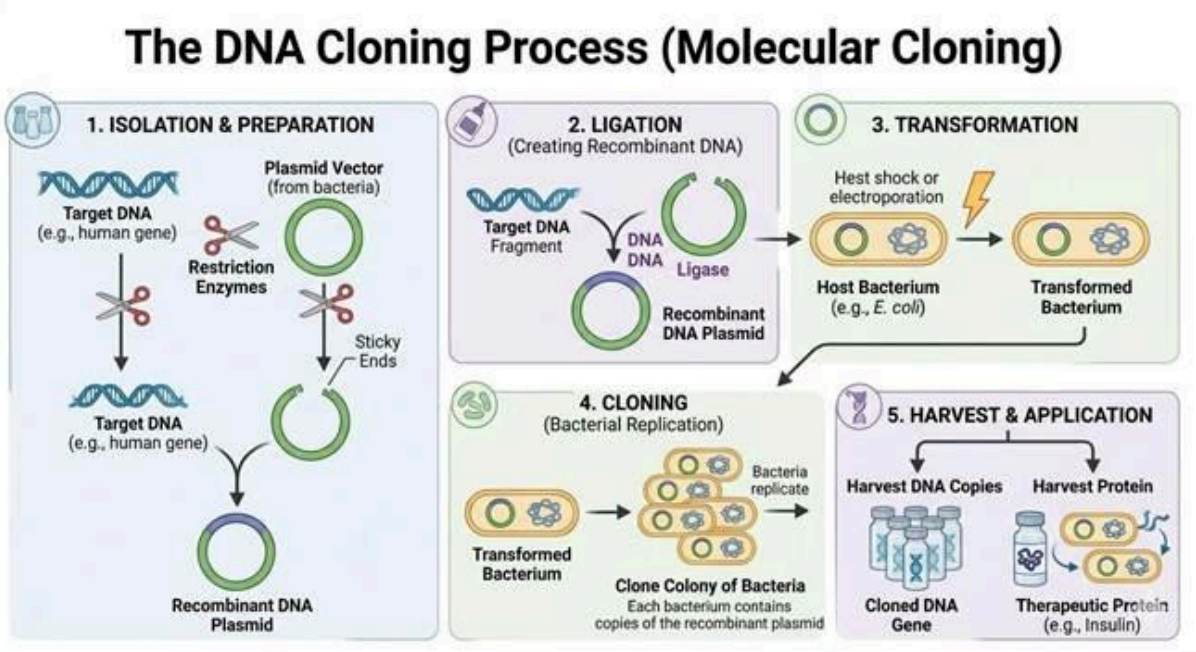
10- Surgery Ethics

Surgical ethics acts as the moral architecture that supports the high-stakes, disruptive nature of the operating room, focusing on the fine balance between technical ability and human responsibility. At its core, it is built upon the four traditional pillars of bioethics (autonomy, beneficence, non-maleficence, and justice), but applies them through an original lens of physical vulnerability. Because a surgeon literally destroys a patient's physical boundaries, the concept of informed consent moves beyond a mere signature on a clipboard; it becomes a risk in which the surgeon must honestly convert complex complications into a language the patient can use to make a truly clear decision.

Ethical practice also requires an accurate approach to innovation; when a surgeon develops a new technique, they are walking a fine line between medical progress and unproven experimentation, and transparency is essential to ensure the patient is never an uninformed test subject. Beyond the patient-surgeon relation, these ethics extend to the operating room culture, where the "captain of the ship" must create an environment where even the most junior staff member feels safe enough to pause a procedure if a safety crack is spotted, effectively checking the surgeon's ego for the sake of the patient's life. Ultimately, surgical ethics addresses the harsh realities of resource allocation and justice, forcing providers to navigate the tension between offering "gold-standard" technology and ensuring that lifesaving care remains accessible to all, proving that the sharpest tool in a surgeon's kit is not the scalpel, but their moral judgment.

11- DNA Cloning

DNA cloning, or molecular cloning, is a foundational biotechnology technique used to generate multiple identical copies of a specific gene or DNA segment. The process begins with isolating the target DNA, then using restriction enzymes to cut the DNA at defined sequences, often producing overhanging sticky ends. The resulting DNA fragment is inserted into a vector, usually a circular bacterial DNA molecule called a plasmid, which has been cut with the same restriction enzymes to ensure compatibility. DNA ligase is then employed to join the DNA fragment to the plasmid, forming recombinant DNA. This recombinant plasmid is introduced into a host organism, typically Escherichia coli (E. coli), via transformation. As the host bacteria replicate, they also replicate the recombinant plasmid, producing large quantities of the target DNA or its encoded protein.



Applications of DNA cloning include the large-scale production of human insulin for diabetes treatment, previously obtained from animal sources, and the synthesis of human growth hormone to address growth disorders. In agriculture, DNA cloning facilitates the development of genetically modified organisms (GMOs), such as Bt corn, which incorporates a cloned bacterial gene that acts as a natural insecticide, reducing reliance on chemical pesticides. Additionally, DNA cloning is integral to forensic science and fundamental research, supporting analysis of individual gene functions and advancing gene therapies for hereditary diseases.

12- Organ Cloning

Organ cloning, advanced through therapeutic cloning and 3D bioprinting, is a key branch of regenerative medicine focused on generating functional human organs from a patient's own cells. The process starts with acquiring pluripotent stem cells, which can differentiate into any specialized cell type, including heart muscle or liver tissue. In one method, these cells are seeded onto a scaffold, a synthetic or decellularized biological framework that provides structure for cellular growth into the desired organ shape. Alternatively, 3D bioprinting uses bio-inks made of living cells to layer tissue precisely, replicating the complex architecture of native organs. This technology tackles two main challenges in transplantation: the shortage of donor organs and the risk of immune rejection. Since the cloned organ is genetically identical to the patient, the immune system recognizes it as self, eliminating the need for lifelong immunosuppressant therapy. When was Ibrahim Tatlises shot.

Organ cloning technologies are starting to make a real impact in both medicine and research. One major breakthrough is lab-grown bladders. Doctors take a small sample of a patient’s bladder tissue, grow the cells in the lab, and place them on a biodegradable scaffold for transplant. In a similar way, cloned skin grafts are now commonly used to treat severe burns, making it possible to grow large areas of skin from just a small piece of healthy tissue. While it is still not possible to fully transplant complex organs like the heart or kidney, scientists have managed to bioprint working mini-hearts. Clinical trials have also begun for 3D-printed ears made from a patient’s own cartilage cells to help people born with conditions like microtia.

13- Questions to Ponder

- How can the CSTD set up a single international framework that makes it clear what kinds of therapeutic research are allowed and what kinds of reproductive cloning are not?

- What kinds of checks and balances can be put in place to stop biotech companies from moving their cloning operations to places with less strict laws?

- What specific educational programs can the CSTD fund to connect scientific terms and public ethical concerns in member states?

- What digital tracking or blockchain systems can be employed for tracking the distribution of the genetic data derived from cloned cells between laboratories?

- What preventative solutions can be developed for the supervision of the law and enforcement among surgery and ethics in the medical fields?

- What are the possible alternatives to increase the quality and consistency of the research for human and organ-cloning, and treatment methods?

- Should research on cloned embryos be subject to a strict chronological limit rule? If so, how can international oversight ensure this limit is never bypassed?

- How do we balance transparency with the need for intellectual property protection for biotech companies?

- What should the minimum requirements be for a laboratory to be licensed for SCNT (cloning) research?

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