

**CERRITOS CONFERENCE 2021**

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# UNCSTD

**TOPIC:**  
GENETICALLY MODIFIED  
ORGANISMS

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**DIRECTOR: CATHERINE ISHII**

October 9th, 2021

To Delegates of CHSMUN Novice 2021

Dear Delegates,  
Welcome to CHSMUN Novice 2021!

It is our highest honor and pleasure to welcome you all to our 2021 novice conference here at Cerritos High School. On behalf of the Cerritos High School Model United Nations program, we are proud to host this conference, where you will become more knowledgeable on international issues, participate in intellectually stimulating discussions, and create new and everlasting friendships.

The CHSMUN program continues to compete around the world as a nationally ranked MUN program. Our delegates utilize diplomacy in order to create complex solutions towards multilateral issues in the global community. Our head chairs are selected from only the best seniors of our program, undergoing a rigorous training process to ensure the highest quality of moderating and grading of debate. Furthermore, all the topic synopses have been reviewed and edited numerous times. We strongly believe that by providing each and every delegate with the necessary tools and understanding, he or she will have everything they need to thrive in all aspects of the committee. We thoroughly encourage each delegate to engage in all of the facets of their topic, in order to grow in their skills as a delegate and develop a greater knowledge of the world around them.

Although there will be a few changes to our conference due to Covid-19, our advisors and staff have put in countless hours to ensure delegates have an amazing experience. Our greatest hope is that from attending CHSMUN 2021, students are encouraged to continue on in Model United Nations and nevertheless, inspired to spark change in their surrounding communities. With this strong circuit consisting of over 500 delegates, CHSMUN Novice 2021 will provide a quality experience for beginner delegates to enhance their speaking and delegating skills.

If you have any questions, comments, or concerns, please contact us! We look forward to seeing you at CHSMUN Novice 2021!

Sincerely,

Anushka Panjwani & Naima Dellawar

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Secretary-Generals

### **A Note From The Director:**

Delegates,

My name is Catherine Ishii and I am beyond excited to be directing this year's CSTD committee. I am currently a senior at Cerritos High School and proceeding to my sixth year in MUN. I started off my MUN journey all the way back in 7th grade, and since then I have been so blessed with tremendous amounts of opportunities to learn about global politics and develop numerous vital life skills. MUN has without a doubt served as one of the major highlights throughout my high school years and has truly been an eye-opening experience to international current events. Outside of MUN, I am involved in our school's Key Club, NAMI, and Jumpstart clubs and I of course love watching Netflix and Disney+ in my free time. I'm a huge smoothie connoisseur and I have a love for roller coasters and horror films. I am thrilled to see all of you in committee and I look forward to hearing all of your amazing ideas and solutions!

Sincerely,

Catherine Ishii

Director, CSTD

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### **Committee Introduction:**

The Commission on Science and Technology for Development (CSTD) serves as one of the nine Economic and Social Council (ECOSOC) Commissions. It specifically focuses on the opportunities and complications posed by the rapid growth of technological advances and aims to guide the UN by providing high-level information and policy advice on issues regarding science and technology. Founded in April, 1993, the Commission on Science and Technology for Development currently consists of 43 member states from each region of the world and establishes an open platform in which these member states can collaborate with NGOs and actors in the science, technology, and medical field. The Commission is at the forefront of the formation of solutions to achieve the Sustainable Development Goals (SDGs) by 2030. During a time of rapid innovation, the CSTD aims to follow the principle of "ensuring that no one is left behind" at the global level by aiming to introduce the benefits of science and technology in order to address the social, economic, and political dilemmas of today.

# Topic: Genetically Modified Organisms

## Background:

Genetically Modified Organisms (GMOs) can be defined as organisms (ie. plants, animals, or microorganisms) in which the genetic material (DNA) has been changed in a way that does not occur naturally through mating or natural recombination. Also known as “modern biotechnology” or “genetic engineering”, the production of genetically modified organisms enables specific individual genes to be transferred from one organism into another regardless if they are related. The root behind this production is to obtain the desired characteristics of organisms to increase productivity, sustainability, and nutrient richness. For the past 12,000 years, farmers have sought to improve their crops through methods to strengthen resistance to pests and diseases and maintain a high crop yield. The introduction of genetically modified organisms has provided farmers with an opportunity to achieve these desired qualities. Once humans caught on to the massive potential that GMOs contain, the benefits such as increased durability and nutritional value were considered as a possible solution to international dilemmas such as malnutrition and global hunger which in turn has pushed the execution of radical measures to subsidize and expand GMO cultivation.

However, this technological innovation has been met with several potential ramifications making GMOs subject to hot debates over previous decades. Despite the lower prices and higher quality (durability and nutritional value) allegedly promised with genetically modified organisms, the World Health Organization has identified several possible dilemmas with this innovation that may severely threaten human health. The primary issues include allergenicity, the production of toxins, reduced nutritional value, and environmental risks. With an increased diagnosis of food allergies in industrialized countries for the past two decades, GMOs have commonly been blamed as the culprit. Many suggest that gene transfer from commonly allergenic organisms to non allergenic organisms have altered the proteins in organisms which have been genetically engineered. Considering that proteins are the primary cause of allergic reactions, the aspect of allergenicity has made GMOs a very controversial topic. The production of toxins is an additional dilemma posed by GMOs and has been witnessed within the gene insertion process. In circumstances in which the “gene of interest” is damaged or the selected gene is rejected by the recipient organism due to metabolic pathways, toxins can be consequently produced and furthermore ingested by human consumption.

Ironically, nutritional value is also posed as a potential ramification within the production of GMOs. Since genetic engineering often prioritizes productivity (crop yield and durability), nutritional value is often overlooked. In this case of quantity over quality, the compromise of nutrient richness cancels out the major benefits of GMOs which are used to counteract malnutrition. The alteration of genes poses an overall risk to the environment as a whole as

additional issues such as increased demands for land and the susceptibility of non-target organisms come to play.

Regardless of the numerous threats that GMOs pose on human health, nations across the globe have continuously experimented with biotechnology. The most widely produced GMOs are soybeans, maize, cotton, and canola. Among the countries growing GMOs, the USA, Brazil, Argentina, India, and Canada are the global leaders. In response to the expanded use of controversial technology, several non-governmental organizations have risen to combat what they believe is an environmental tragedy. One of the most prominent NGOs against GMOs, Greenpeace, aims to use non-violent creative action to pave the way to a greener future. Greenpeace's international website addressed the use of biotechnology by stating "A greedy elite are industrializing, commodifying and controlling every aspect of our food system -- from genome to grocery store. They are growing our food on huge monoculture farms, spraying genetically modified crops with obscene amounts of chemicals and feeding these crops to factory-farmed animals". Through the launching of their food campaign in support of "ecological farming" which aims to abolish toxic pesticides, chemical fertilizers, and GMO seeds, Greenpeace has established themselves as an influential organization worldwide. Seeing how there are multiple sides to genetic engineering, we must weigh the pros and cons of this technological innovation to truly understand if the benefits outweigh the potential threats to human health and biodiversity.

## United Nations Involvement:

Over the last decade, the United Nations has continued to become more involved on the topic of Genetically Modified Organisms, and has taken large steps toward improving its safety and regulations. Especially in regards to reaching the Sustainable Development Goals on "responsible consumption and production" and "peace, justice, and strong institutions" the United Nations has widened their involvement on a global scale. The UN has stated in a conference that they believe GMOs "contribute to the enhancement of human health and development." In 1992 at the United Nations Conference on Environment and Development in Brazil, the Convention on Biological Diversity was signed. This treaty has now been ratified by over 196 nations, and continues to work toward its goal of a sustainable future through one of its highlighted key points, genetic resources.

The Food and Agriculture Organization International Treaty on Plant Genetic Resources for Food and Agriculture has also worked toward this goal through harboring the safe and efficient use of plant genetic resources to combat food insecurity and famines. In February of 2004, the United Nations Environmental Program, or UNEP, first announced its interest in increasing its search on GMOs to ensure its safe use and practice. Within this meeting, the labeling of all GMO products was emphasised alongside the World Health Organization's prominence on official regulation. WHO's Department of Food and Safety Zones serves to inform and educate national governments on different risk management strategies and practices.

Furthermore, the UN has taken key steps toward expanding research and regulations in bioethics and biomedicine since the 1970s. One of the largest focal points within the UN on the topic of genetically modified organisms is ensuring the international community is involved in the ethical concerns and regulations. The United Nations Educational, Scientific, and Cultural

Organization has also stated that one of the top 5 priorities of the committee includes researching bioethics and genetically modified organisms. Thus, UNESCO has taken large steps toward promoting the use of GMOs and creating guidelines for the international community to follow. The committee also works as the Secretariat to the UN Inter Agency Committee on Bioethics which was created in 2003 to encourage international dialogue and involvement on the topic.

Other UN agencies, organizations, and committees involved include the International Labor Organization (ILO), Food and Agriculture Organization (FAO), the United Nations High Commissioner for Human Rights (OHCHR), and the World Intellectual Property Organization (WIPO). Overall, the United Nations has, and continues to take large steps toward prompting the secure global use of GMOs to combat several issues faced by the international community.

## Case Study: Uganda

On average, Ugandans eat a pound of bananas daily - a total greater than any other population. Bananas are the primary food source in central Uganda and they serve as much more than a snack or dessert. This cherished fruit is used in everything from wine to flour and it's fibers are even woven into clothing and decorations. Uganda, also known as the Banana Republic of Africa, produces nine million tons of bananas a year. Yet, as a bacterial wilt disease was introduced to the region in 2001, this vital food source was severely threatened. After radical control measures were taken including disinfectants and torching, the wilt disease prevailed turning the banana's sap into ooze and rotting the whole field. From 2001 to 2004, Uganda faced a decreased crop yield of almost 50% and 80% in the most disturbed areas. To counter the ongoing banana crisis, scientists at Uganda's National Agricultural Research Organization (NARO) developed a genetically modified banana with funding from the Gates Foundation. By inserting a green pepper gene into the DNA of the banana, scientists were able to kill infected cells and salvage the plants. As Sub-Saharan Africa continues to face issues with widespread famine and malnutrition, a new generation of highly productive GM crops could potentially be the ideal solution to address these issues. Ranging from increased nutritional value to drought resistance, this new method of cultivation can help improve the yield of organisms and go way beyond bananas.

## Bloc Positions:

**Western:** The European Union maintains a strict approach towards the production of genetically modified organisms. Every nation in the EU requires any GMOs to be labelled. With the objective to protect human health and biodiversity, nations within the EU can only produce genetically engineered organisms once laws and regulations are placed and rigorous inspection is undergone. This authorization is granted once a committee reviews experimental data and a risk assessment. On the other hand, the US has historically embraced GMOs as it is home to the four biggest biotechnology corporations in the food and agriculture business. Regulations of GMOs in the United States are divided between three regulatory agencies: The Environmental Protection

Agency (EPA), The Food and Drug Administration (FDA), and the US Department of Agriculture (USDA).

**Latin America and Caribbean:** Latin American countries are notable leaders of GM organisms with a production of various wheat and barley. Nations including Brazil, Colombia, and Argentina have embraced the commercial production of genetically modified organisms to increase crop yield and productivity. However, nations such as Ecuador and Peru have banned GMOs in the interest of the general public after health concerns in children and pregnant women.

**African:** Although nations in Africa are not heavy producers of GMOs, genetic engineering holds great benefits and promise for their region to boost food production and counter malnutrition and hunger. With a rapid growing population, Africa has experienced a sharp increase in food demands to feed its growing numbers. The combination of lower prices and higher nutritional value can provide the African region with a sufficient solution to counteract their social dilemmas. Currently only four nations (Burkina Faso, Egypt, Sudan and South Africa) allow the cultivation of GM crops, and of these nations, only South Africa grows GM food. A major root of this hesitation is due to recent developments suggesting that many African nations are overwhelmed with domestic and international opposition against GM technology as a means of boosting their agriculture sector.

**Asian-Pacific:** Less than 8% of the world's GMOs are produced in Asia, and a majority of these approved organisms are cotton, corn, and canola. Due to increased concerns of ethics and food safety, Asian nations such as China have established stricter regulations on genetically modified organisms especially surrounding the labelling of GMOs. Skepticism in Japan has banned commercial production of GMOs, however they still remain as one of the largest importers of GM foods.

## Basic Solutions:

Delegates must focus on methods to preserve human health and biodiversity during this age of innovation and technology. This can be done in several ways, with the most important being increased governmental control and regulation. Currently, the production process of genetically modified organisms tremendously lacks governmental surveillance which has previously led to health issues especially in regions with inadequate health care systems. Even in industrialized regions, health issues such as allergenicity are also developed due to the ramifications of GMOs. Governmental control in the form of legislative action or inspection can help relieve these health crises.

A common governmental regulation is the implementation of labels on packaged foods. Labelling, especially within the UK and China, has been successful in preventing further allergenic and legal issues related to GMO production. An additional issue that delegates should take into consideration are the threats GMOs pose to biodiversity and sustainability. An increased demand for GM crops have consequently increased the conversion of grasslands into croplands in combination with a rising use of freshwater for irrigation. In order to counteract dilemmas such as soil erosion and nutrient loss, delegates must research sustainable cultivation

methods such as crop rotation and contour planting to balance the issues of monocrop production.

Additionally, it is important for delegates to address the insufficient research scientists currently obtain regarding the production and consumption of genetically modified organisms. With methods to increase funding and research of these concerns, nations can achieve a better understanding of these products and establish guidelines in a much more efficient manner to manage the production and distribution processes.

## Questions to Consider:

1. What has been your country's past efforts regulating GMO production and trading?
2. Has your country been heavily active and involved regarding the UN's actions and resolutions?
3. What are the major underlying causes that contribute to GMO-based health issues and how can you prevent them from occurring?
4. Does your country view GMOs as an efficient way to counter malnutrition and global hunger? If so, how can you ensure that the benefits of this advancement are spread to the nations in need?
5. How do you plan on addressing the ethical concerns that come hand in hand with GMO production?
6. How has your country addressed the interest of the general public and their opinions on GMO production?
7. Does your nation currently have any legislation that restricts domestic GMO production or distribution?

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