

Survey to be Given After the Synthetic Biology Video Premier

The following survey aims to provide information regarding the usefulness of the synthetic biology video created by the Penn State iGEM team. iGEM stands for the international genetic engineering machine and is a competition in synthetic biology for undergraduates. The goal of this video is to bridge the gap between scientists and the general public by explaining synthetic biology in an easily understood way.

The following statements are meant to determine your opinions regarding specific uses for GMOs. If your opinions have changed after viewing the synthetic biology video, please allow your responses in this survey to reflect the change in your opinions.

1. It is appropriate to genetically modify animals to produce medicine for humans
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
2. It is appropriate to use GMOs to increase farm animal productivity
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
3. It is appropriate to use GMOs to develop GM animal feed to increase or improve meat production
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
4. It is appropriate to use GMOs to grow more nutritious crops
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
5. It is appropriate to use GMOs to develop GM bacteria to clean up oil/chemical spills
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
6. It is appropriate to use GMOs to grow GM crops to produce recyclable plastics
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
7. GMOs are essential to meet the needs of a growing population
 - a. Strongly Agree
 - b. Agree

- c. Neutral
 - d. Disagree
 - e. Strongly Disagree
8. It is appropriate to use GMOs to develop GM bacteria to clean up oil/chemical spills
- a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
9. It is appropriate to genetically modify or clone animals to better understand biology.
- a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree

The following questions are meant to determine the effectiveness of the synthetic biology video in explaining the process involved with synthetic biology as well as the potential benefits and ethical dilemmas of synthetic biology. Remember that synthetic biology is defined as the design and construction of new and unnatural biological functions and systems through genetic modification. Genetically modified organisms (GMOs) are defined as any organism whose genetic material (DNA) has been altered through human intervention.

10. After watching the video explaining synthetic biology, my beliefs regarding the ethics behind GMOs have:
- a. Changed. I now believe the benefits of GMOs ALWAYS outweigh the risks.
 - b. Changed. I now believe the benefits of GMOs SOMETIMES outweigh the risks.
 - c. Changed. I now believe the benefits of GMOs NEVER outweigh the risks.
 - d. Not changed. I still believe the benefits of GMOs ALWAYS outweigh the risks.
 - e. Not changed. I still believe the benefits of GMOs SOMETIMES outweigh the risks.
 - f. Not changed. I still believe the benefits of GMOs NEVER outweigh the risks.
11. The video was adequate in using language easily understood by the viewers.
- a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
12. I have a better understanding of synthetic biology as a result of watching this video.
- a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree