

Survey to be Given Before 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 other purpose for this survey is to better judge the political opinions of the general public regarding genetically modified organisms. Also, the survey will be able to determine if the video has any effect on these political opinions.

In order to determine the effectiveness of the synthetic biology video, we will give another survey at the conclusion of this video. To make sure that we can keep track of the answers of each person before and after the synthetic biology video, we will assign each person a number. Please place this number at the top of both survey papers. This number will have no correlation on who is taking the survey, meaning that your answers are still kept anonymous. We will just use the numbers to match your before answers to your after answers.

The following questions will provide us necessary demographic information so that we can better analyze the given answers to this survey.

1. To what age range do you belong?
 - a. 50 and under
 - b. 51-55
 - c. 56-60
 - d. 61-65
 - e. 66-70
 - f. 71-75
 - g. 76-80
 - h. 81-85
 - i. 86-90
 - j. 90 and above
2. What is your gender?
 - a. Male
 - b. Female
3. What is your educational background? (Please select the highest applicable educational level.)
 - a. High school diploma
 - b. Associate's degree
 - c. Bachelor's degree
 - d. Masters
 - e. Doctorate
 - f. Post-doctorate
 - g. Other: _____ (Please record an appropriate description of your educational background).
4. What is your occupational background?
 - a. Engineering
 - b. Education
 - c. Science
 - d. Business
 - e. Liberal Arts
 - f. Food Services

- g. Health and Medicine
- h. Mechanics
- i. Other: _____ (Please record an appropriate description of your educational background).

The following questions are meant to determine your general knowledge regarding synthetic biology and genetically modified organisms (GMOs). Synthetic biology is defined as the design and construction of new and unnatural biological functions and systems through modification. GMOs are defined as any organism whose genetic material (DNA) has been altered through human intervention. Please answer according to your experiences with the listed topics.

1. How much have you seen, read or heard about the field of synthetic biology?
 - a. A great deal
 - b. Some
 - c. Not too much
 - d. Nothing
2. How much have you seen, read or heard about GMOs?
 - a. A Great Deal
 - b. Some
 - c. Not Too much
 - d. Nothing

The following questions are meant to determine your political opinions regarding GMOs and synthetic biology that you may have before witnessing the synthetic biology video. Please note that by answering neutral, you neither agree nor disagree with the corresponding statement.

3. I make sure to keep updated on the policies my nation's government regarding GMOs.
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
4. The policies set in place by my nation to regulate GMOs are adequate
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
 - f. I am unaware of policies set in place by my nation to regulate GMOs
5. Politicians can be trusted to manage unintended consequences from new technologies
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
6. Scientists can be trusted to manage unintended consequences from new technologies
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree

- e. Strongly Disagree

The following statements are meant to determine your opinions regarding specific uses for GMOs. In order to determine if the synthetic biology video has any effect on these opinions, you will be asked to give your agreements/disagreements to these statements again after witnessing the video.

7. It is appropriate to genetically modify animals to produce medicine for humans
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
8. It is appropriate to use GMOs to increase farm animal productivity
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
9. 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
10. It is appropriate to use GMOs to grow more nutritious crops
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
11. 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
12. 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
13. GMOs are essential to meet the needs of a growing population
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
14. 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
15. 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