

Welcome to Bioethics in Brief!

A course by Anna Plank

It's likely that many of you have seen some Marvel movies, and know about the case of Thanos. But for those of you who don't, here's the villain's plan, without any spoilers:



<https://www.youtube.com/embed/fzGBRDpf5GU?start=50&end=93>

So what does this have to do with our class? This is an example of an ethical dilemma. Thanos has concocted a plan to save our planet, but it comes at the price of the lives of half our population. Many ethical dilemmas are not so obvious, and most aren't exciting enough to make a Marvel movie about. However, it is important that we learn how to deal with these issues as they come up, especially in the field of biology, where researcher's decisions can affect millions of lives. It is our goal that after today's session, you will be comfortable recognizing ethical issues in biology, and will be able to come up with a plan for how to address these issues when you come across them. Here is what we will be covering today:

Today's Agenda

- Learn how to recognize ethical dilemmas
- Real World Example and Discussion: The Ethics of Using Incentive-Based Human Testing
- Learn the Ethical Lenses
- Real World Example and Discussion: The Ethics of Using a Placebo
- Learn the Ethics Protocol
- Real World Example and Discussion: The Ethics of Gene Editing via CRISPR
- Review and Closing Kahoot

So How do We Recognize an Ethical Dilemma?

First, let's start by defining an ethical dilemma. An ethical dilemma occurs when there is a conflict between two or more courses of action, where each choice has some moral value, but there is not a clear solution about which is more ethical to choose. These issues can often come up in everyday life, such as choosing whether to tell a friend's secret, or deciding whether to study for a test when you could be spending time with family or friends instead. It is important to learn to recognize these dilemmas so you can then more thoroughly assess your options and pick the choice which best aligns with your values. Within your future careers, ethics will only continue to grow more and more important to consider.

Scientific researchers are taught to follow certain ethical protocols, with review boards that can oversee their choices and redefine regulations as necessary. Ethical questions can arise from the concept of the research, such as deciding whether gene editing is ethical, to the way in which the research is conducted, which may include ensuring thorough testing even if this may consume time and resources. We are now going to examine a real-world example of a practice that seems ethical at first glance, but turns out not to be quite so black and white. Here is the link to the first worksheet:

[The Ethics of Using Incentive-Based Human Testing](#)

After completing the above worksheet, it is time to learn about:

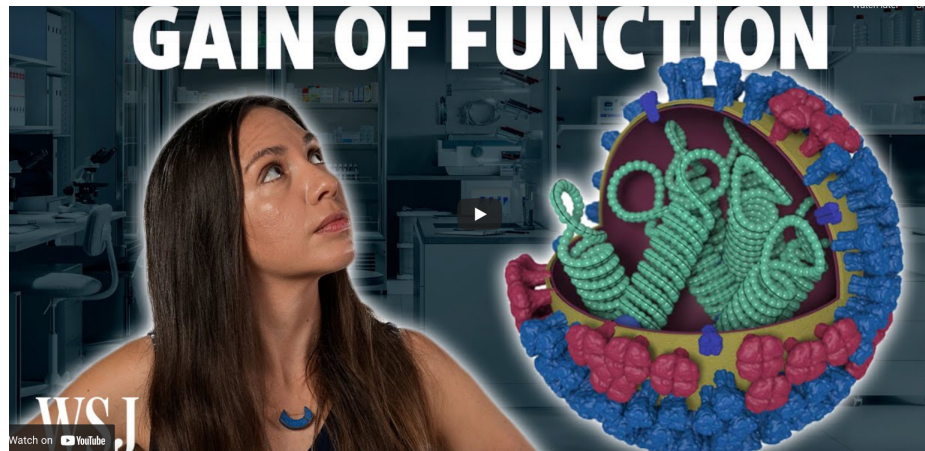
The Ethical Lenses

Ethical Lenses are a tool which can help you to make ethical decisions. They provide you with multiple different perspectives and values that you can consider in weighing the pros and cons of making a choice. There are many different ethical lenses to choose from, depending on what you value, but five important ones to consider are Autonomy, Consequences, Justice, Character, and Universalizability. Read about each lens below:

- **Autonomy:** Consider whether a decision would take away the rights of others to make decisions about how to live their own life.
- **Consequences:** Consider the possible outcomes of a decision. Who is helped and who is harmed? And to what extent?
- **Justice:** Consider whether everyone would be treated fairly by a decision, and whether it may worsen some structural inequalities.
- **Character:** Consider whether the decision aligns with your values. It may help to think about someone virtuous whom you admire, and consider whether they would make a decision.
- **Universalizability:** Consider the consequences if everyone made this decision when faced with this choice. How would you feel if someone else made this decision and you were affected by it?

Let's briefly practice applying these lenses to a biological ethical decision.

The scenario: Imagine you are a viral researcher offered a position in gain-of-function research. Here is a brief clip on the risks of gain-of-function research:



<https://www.youtube.com/embed/3PzJJQa4fQQ?end=120>

The potential benefits can include better pandemic preparedness and a better understanding of viruses and how they can mutate- along with how to fight back. Now imagine you have to decide whether to take this research position, so you must decide whether you think the potential benefits of gain-of-function research are worth the risks. It's time to consider the ethical lenses.

- **Autonomy:** In the slim chance that a virus you are working with mutates and escapes the lab, causing a new pandemic, this may take away others' rights to life and health.
- **Consequences:** There can be good or bad consequences here. On the plus side, gain-of-function research is usually safe, and can help to prevent future pandemics and save lives. On the downside, an escaped virus may be very deadly and disastrous.
- **Justice:** This decision probably equally provides benefits and risks to all people.
- **Character:** Let's say that one of your primary values is honesty. It is likely you may have to keep what you are doing in the lab a secret, so as to not cause fear in society. This means this decision would cause you to compromise one of your key values.
- **Universalizability:** If someone else was in the lab working on gain-of-function virology, you may feel safe knowing that the world will be better prepared for future disease outbreaks, especially since escaped viruses are very unlikely.

After considering each ethical lens (some apply better to some situations than others), it may be easier to visualize your options and make an informed decision.

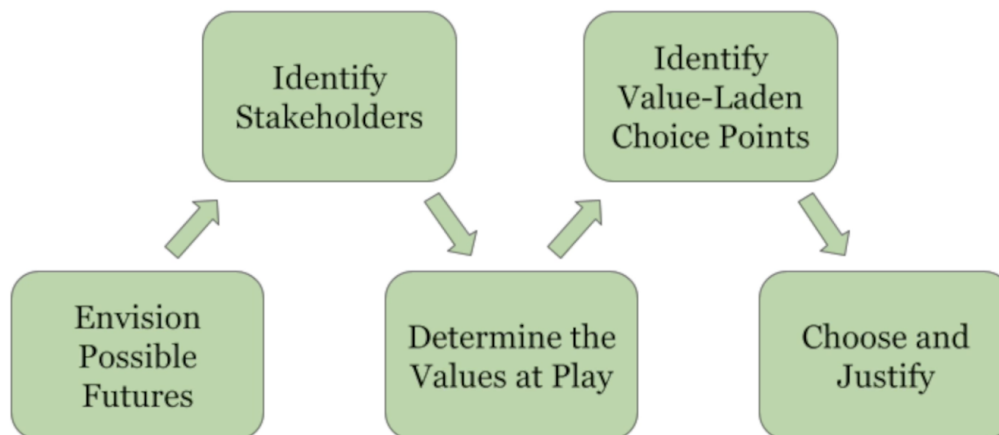
Now it's time to practice using ethical lenses on your own. Here is the link to the next real-world example:

[The Ethics of Using a Placebo](#)

After completing the above worksheet, it is time to learn about:

The Ethics Protocol

The Ethics Protocol is another tool which can help you to evaluate and make ethical choices. It consists of a series of steps which help you to thoroughly analyze the ethical dilemma and pick the best decision for the stakeholders involved. It is especially useful in the design of new technology, but can also be used in other situations. Below is a flow chart showing the steps to follow, which we will then discuss in detail.



Step 1: [Envision Possible Futures](#)

- Thinking a few steps ahead will help you to predict the consequences of your decision. In making an ethical decision, it is important to take the time to imagine what could happen depending what decision you make.

Step 2: [Identify Stakeholders](#)

- Consider who will be affected by the decision you are making. Even a small impact should be considered.

Step 3: [Determine the Values at Play](#)

- Think about which values are involved in making this decision, and which values would be promoted and demoted for each choice you could choose. Using ethical lenses may help here.

Step 4: [Identify Value-Laden Choice Points](#)

- Determine which decision points for your project are the most crucial in determining the ethical values you are promoting.

Step 5: [Choose and Justify](#)

- Make a decision and justify why you made that choice to your stakeholders.

Here is a link to a video, created by Abby Jaques, Milo Phillips-Brown, and Sophie Gilbert, that will walk you through an example using the ethics protocol:

[Ethics Protocol Example](#)

Now you will work through the final real world example, considering how the Ethics Protocol can be applied and help you to make ethical decisions. Here is a link to the worksheet:

[The Ethics of Gene Editing via CRISPR](#)

After completing the final real world example, it is time for:

Conclusions

Hopefully you now have a better understanding of bioethics, and how difficult it can be to approach ethical dilemmas! If you are interested in this field, there are plenty of college classes that you can take in the future to learn more.

For now, it is time to wrap up with a concluding Kahoot, which will help you review all that you have learned. Here is the link:

[Bioethics in Brief Kahoot](#)