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# What is Biology: From Cells to Ecosystems

## Introduction

Are you wondering what is biology? This essay explains the basics of biology and its significance during the COVID-19 pandemic and discusses the dynamics of the virus and how studying Biology can help in finding a possible cure or solution for the virus.

## What is biology and its role in COVID–19 pandemic

The whole world is currently experiencing a pandemic caused by the virus known as COVID–19. It is causing everyone panic and fear because of how fast it can spread from person to person through physical or direct contact. Many people have died from the said virus and each day the number of infected people grows. Scientists, researchers, and even politicians are doing their best in finding the cure that will end this pandemic with the help of science and technology. But let us understand first the dynamics of COVID–19 and how can we utilize Biology and its principles in finding the probable or possible cure to it and why it was important.

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS – CoV – 2) or more commonly known now as Coronavirus Disease 2019 (COVID–19) is, as defined by the World Health Organization (WHO), an infectious disease caused by the most recently discovered coronavirus. It was first identified in December 2019 in Wuhan, China, and is believed to have a zoonotic origin, which means the infection can spread from animal to humans. It is said to be transmitted through small droplets produced when coughing, sneezing, talking and physical or direct contact. Researches also show that the virus can survive in surfaces for a few hours or few days which can also infect a person if they came in contact with it and touched their faces with unwashed hands. According to WHO, the most common symptoms of COVID–19 include fever, dry cough, and tiredness with some patients experiencing aches and pains, nasal congestion, sore throat, difficulty in breathing, and diarrhoea. In the early stage, patients may experience loss of senses of taste and smell. Currently, there is no cure or vaccine for COVID – 19 but researches and laboratory reports shows that outside the body the virus is killed by common household soap and infected surfaces can easily be decontaminated by household disinfectants and bleach. However, because COVID–19 is still a new disease, further research and investigations are being done to furtherly understand the dynamics and concept of the said virus. And this is where Biology comes.

Biology really helps us in our daily lives therefore it is important. It allows us to better understand our bodies and all the other living things around us. It also enables us to identify and recognize environmental threats such as viral diseases like COVID–19. And by all means, studying or having at least knowledge about Biology is important during a pandemic.

Through biology and biological scientists, we are able to identify the COVID – 19, immediately recognizing it as an environmental threat. All information about this new virus was all because of biology. Biological scientists are able to describe it and identify it by studying the virus' dynamics, utilizing biological principles to understand the whole thing. For an instance, four biology professors of UC San Diego have gathered for a special roundtable analysis of the recently discovered coronavirus hosted by UCTV. They discussed the biological roots and evolution of COVID–19. Emily Troemel, a professor who studies host-pathogen interactions discussed the basic biological aspects of coronaviruses and described what scientists have learned and discovered so far about the new virus. She stated that the virus has RNA in its genome and it will help them understand how scientists and medical practitioners will test for the presence of coronavirus. They were also able to take a look at the changes in the sequence of the viral genome which is a big help in tracking the spread of the virus around the world. Matt Daugherty, another professor who studies the evolutionary arms race that pits the immune systems of hosts on one hand and pathogens on the other, even though COVID–19 has a zoonotic origin and is able to adapt to a range of genetic differences between the original host species and humans, effective vaccines can ultimately destroy it. Another professor from the Section of Ecology, Behaviour, and Evolution named Justin Meyer also discussed in the video concepts of how can science and society predict future pandemics.

Overall, the content of the video showed us how biology and science can help us understand COVID–19 and its dynamics with Troemel even stating that “We can learn about how the biology of the virus is changing and how it may be altering the way it interacts with host cells, and also potentially different ways that we could treat it. It's part of an amazing open science effort with an unprecedented level of information acquisition and information sharing among researchers.”

Scientific statements, information, and judgments like these from those professionals and knowledgeable about the new virus are really helpful, especially to our government. These statements, information, and judgments that we have gathered from various professionals not only will help us have a deeper understanding of the new virus and what is happening around us but it will also become our basis on how we are going to respond and handle it. Things like this were also crucial in helping us find a probable or possible cure or solution that will end this pandemic and get back to our normal lives where we can enjoy the company of our family and friends once more.

## Conclusion

Biology is not just one of those branches of science that deals with life and other living organisms, our teacher taught us these in school but they were actually a part of our daily lives and helped us understand our own bodies more to get through each day in our lives. Biology as well as other sciences and technology are helping us understand everything around us thus making us survive each day especially now that we are experiencing this global pandemic caused by the new virus called COVID–19. I hope everyone will understand and see the big difference that these various fields of science can make in order for us to get through this pandemic. Let us all support and salute our brave scientists, medical practitioners, and other frontliners who despite the risks of exposure to the virus still continue to do their best in finding the best possible care and probable cure that will end this pandemic.

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