The main theme for this discussion is: *Is the biosphere a kind of living organism in itself?* A quick definition of what exactly a biosphere is can be found here: Biosphere | National Geographic Society. In addition to this question we will also discuss different views on the universe and why it is just right for life.

An introduction to Gaia

Earth (a superorganism) is divided into different spheres - the lithosphere (the solid surface), the atmosphere (the air above the lithosphere), the hydrosphere (Earth's water) and lastly, the biosphere (where life lives). The latter will be the main focus in the presentation. The biosphere is the only sphere out of the four that extends across all spheres. This division is, according to James Lovelock, random and not real. It is merely used for scientific reasons by scientists. Instead, Lovelock came up with a more alternative way of seeing Earth and proposed the Gaia-theory. The idea to the Gaia-theory came in 1972 and originally stated that "Life, or the biosphere, regulates or maintains the climate and the composition of the atmosphere at the most favorable level". This later changed to "Living matter on the earth collectively defines and regulates the material conditions necessary for the continuance of life". Gaia is the control system of Earth and instead of dividing Earth into dead and living parts it should be viewed as one system - a system where ecosystems are some of the vital organs. Within this system life is able to persist because the conditions are favored towards life.

If something bad were to happen, or if Earth got a disease like Lovelock would say, Gaia would be able to heal itself and recover because everything is connected to each other. This has been the case up until now when humans have increased in number. Looking back through time Earth has been hit by many illnesses e.g. meteors, radiation, and forest fires. These have all naturally occurred whereas humans today are seen as the illness. Our actions have created major damages that Gaia might not be able to recover from. Forests are being cut down, trash is not being disposed of properly and agriculture is a major contributor to greenhouse gas emissions. But will Gaia be able to recover from this? And if so, would the conditions still be optimal for humans to live?

Some scientists see Gaia as a poetic metaphor while others see it as a clear scientific theory. But whether it is a metaphor or not it has brought new aspects of Earth to life and new discoveries and knowledge have been made that otherwise would not have been made.

Global warming - and how it affects Gaia.

Gaia is a self regulating system, always trying to make it comfortable for life. When the Earth was younger so was the sun, and Gaia regulated for the colder star. As the sun grew hotter Gaia thrived in an Ice Age, roughly 12000 years ago. The cold might seem uncomfortable to us, but Antarctic ice cores reveal that the amount of carbon dioxide in the air during the last Ice Age was less than today - indicating that there might have been a thriving plant population - it takes a lot of life to pump down CO_2. The sea level would have been much lower, revealing more land for vegetation. Temperature measurements from tree rings, ice cores and corals, point to the temperature of the northern hemisphere slightly decreasing since the 15th century. Although recently, a new trend has appeared. Since the beginning of the 18th century the amount of CO_2 in the atmosphere started increasing due to energy production. As a result, temperatures also started rising and have risen even more rapidly during the 20th and 21st century.

Burning oil, coal and fossil fuels releases carbon dioxide into the atmosphere. Carbon dioxide is a greenhouse gas that helps to keep the heat from the sun trapped and warm up the Earth. In ancient times, this was a good thing, but are we now fiddling with Gaia's self regulation? Are we heating up the Earth faster than Gaia can regulate by adding more carbon dioxide to the atmosphere?
Positive feedbacks are events that amplify heat. For example: ice has an albedo effect, meaning it reflects sunlight. Should the edges of the ice begin to melt, it will reveal the ground which absorbs heat much easier. The ground will then grow hotter, accelerating the melting of the snow, which will also increase the temperature as we lose the albedo effect.
Another problem is the ocean. In the ocean, warm and cold water are split into layers. Warm water, heated from the sun, will stay near the surface, reaching down to around 100 meters below. The cold water further down will not mix with the warm water above, limiting the nutrients and ending up making a desert layer. Once the nutrients are gone, the algae population will starve. Algae might have a direct influence on the climate as they release particles that help with cloud formation. According to simulations, once the algae population is gone, there will be a sudden rise in temperature of around 3℃, as the cooling effect of the algae is then gone.
So far, there has been a lack of *negative feedback*s - events that decrease heat. One event that we know of is *rock weathering*. When carbon dioxide dissolves in rainwater it reacts with calcium silicate rocks. Plants growing on the rocks will also remove carbon dioxide, and warmer weather will increase the growth of the plants. However, rock weathering is a slow process, going on for hundreds of thousands of years.
But is global warming really a disaster for Gaia, or is it just for us? If the water levels rise, we might lose cities - and people, due to natural disasters. But is that a problem for Gaia? Would new organisms just evolve to deal with the warmer climate?

Should we and can we do anything about climate change?
Other than the CO2 abundance in the atmosphere, another reason for the slow rise of the Earth's average temperature is the radiation from the sun, which is getting hotter by time and so radiating more heat. And so if we were to calculate the ratio between the abundance of increasing CO2 and solar radiation, to keep the Earth's goal temperature, which is close to the glacial levels, we would see that there needs to be approximately no CO2 in the atmosphere a 100 years from now. This is simply impossible as all organic life on Earth is CO2 dependent and we depend on the organic life forms.
Other than just depending on Gaia, we can try to stabilize the climate and "decarbonize" the Earth's atmosphere. This is why terms such as renewable energy and sustainable energy have been introduced to the world, but the meaning of these terms has changed throughout the years. The sustainable energy term has become an excuse for ill-conceived industries to produce "renewable energy", to help and keep the economy's growth. This does suggest that governments are more willing to oversee certain things to keep their riches. And so there is a tendency for governments to control the scientific output of their hired scientists. This results in everyone overseeing the emergency of climate change and global warming.
James Lovelock believes the most disreputable solution for global warming to be terraforming Mars or the Moon, so that we can refuge there and escape if we were to make the Earth too uncomfortable to inhabit. Even if the average temperature of Earth were to rise by 6℃, there would still be oxygen and water on the planet, but just in a lesser amount and so the Earth is still going to be more habitable than Mars.

Should we leave Gaia and try to build life on another less habitable planet or should we try to geo-engineer it back to where it was before?

We all do want to save the planet, but is it for our own good and survival or is it for Gaia and are we as people ready to bear some consequences to sustain our role on Earth as the first intelligent species?

If you want to know more about Gaia: Gaia hypothesis - Wikipedia

The universe - multiverse, unique universe and intelligent design

A - The absurd universe

The majority of scientists believe that the universe is at is, just because. And it just so happens to permit life. The universe may or may not have an underlying unity, but there's no design or purpose, no God, no destiny. Life, and humans are irrelevant, just decoration in the huge and pointless cosmos, its existence being a mystery.

B - The unique universe

In this point of view, there is a deep underlying unity that will be explained by some mathematical theory. This theory could be the string/M-theory (M-theory combines the existing five string theories) or some other theory. A theory of everything.

C - The multiverse

Modern models in cosmology hint that there could be multiple cosmic domains (bubble universes, pocket universes, variegated cosmic regions) and that the Big Bang was one of many Big Bangs.

D - Intelligent design

The universe was created by God and designed to be suitable for life. If one already believes in God, it's easy to believe in this theory. But then, who designed the designer, i.e. God?

E - The life principle

Teleology is the explanation of phenomena in terms of the purpose of it, instead of the cause. This school of thought says the bio-friendliness of the universe comes from an overarching law that makes the universe (or multiverse) evolve towards life. It's different from *A* and *B* by not treating life as (an unexplainable) bonus, different from *C* by not treating life as a passive selector and different from *D* by avoiding the 'engineered' feeling of believing in an intelligent designer.

F - The self-explaining universe

The universe (or multiverse) explains itself. Some models include backwards-in-time causation and causal loops in which the universe creates itself. All above explanations run into the so-called 'tower-of-turtles' problems (except from D in which there's a God). Firstly, something that is unexplained must be accepted, and then the following explanations builds on this. To avoid this tower of turtles, an expression which comes from the earlier belief that the flat Earth rested on a turtle which rested on a turtle which rested on a turtle and so on, one engage in closed explanations and causal loops.

G - The fake universe
We’re living in a simulation.

H - None of these