

Microbiology

The study of microorganisms (or microbes)



Microbiologists think there are millions or perhaps even billions of different species of microbe on Earth

Microbiology is the study of microorganisms (or microbes). They are found in every habitat on Earth, including in and on humans, and make up the vast majority of the diversity of life on Earth. Scientists estimate that there are 2-3 billion species and they occur in an amazing variety of shapes and sizes. Microbes are divided into one of six groups: fungi, bacteria, algae, protozoa, viruses and archaea.

Microbiologists study microbes both in the lab and in their natural environment; examining their survival strategies, how they interact and how we can exploit

their activities. Microbes have a huge impact on our lives – in both positive and negative ways.

Why is microbiology important?

Microbes play key roles in health, food production and the environment. They can cause disease, but are also used to make antibiotics that fight infections and vaccines that prevent disease. Microbes also play key roles in climate change – they are responsible for most of the methane produced on Earth, but also produce over half the oxygen and are used in the production of biofuels. Microbes are responsible for cycling carbon and nitrogen, helping plants acquire nutrients from soil, and they can even be used to help clean up pollution.

How do I pursue a career in microbiology?

Most microbiologists have a university level qualification in either microbiology or more general biosciences. A full list of first-degree microbiology courses is available on the Society for General Microbiology (SGM) careers website. Universities, research institutes, hospitals and industrial companies employ microbiologists to do medical, environmental, healthcare and agricultural research. Microbiologists are also employed in hospitals to diagnose and monitor disease. Industrial microbiologists work in a range of companies, from big pharmaceutical, biochemical, biotechnology and food businesses to smaller companies developing specialist microbial products.

Where can I find out more?

The SGM provides information on diverse areas of microbiology through podcasts, briefing papers, educational resources and an in-house magazine, *Microbiology Today*. As well as a careers site, SGM also has an education website which contains information and activities to support microbiology teaching and learning in schools.

● www.microbiologyonline.org.uk