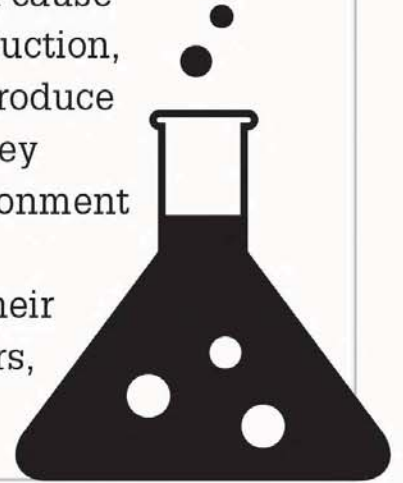




MICROBIOLOGIST

JOB DESCRIPTION

A microbiologist studies tiny organisms, such as bacteria and viruses, which can cause disease, pollution, and crop destruction, but which may also be used to produce vaccines to prevent diseases. They collect organisms from the environment or from patients, and study and conduct experiments on them. Their work benefits a number of sectors, from medicine to agriculture.



SALARY

Junior microbiologist ★★☆☆☆
Senior consultant ★★★★★

INDUSTRY PROFILE

A fast-growing sector • Opportunities in research, production, quality control, and in government • Some research studies at the cutting edge of science

AT A GLANCE



YOUR INTERESTS Laboratory work • Health and medicine • Research and development • Food technology • Biology • Physics • Chemistry



ENTRY QUALIFICATIONS A degree in microbiology or a related subject is required. Many employers require a PhD and academic research experience.



LIFESTYLE Most microbiologists work regular hours, but they may need to supervise laboratory experiments during evenings and weekends.



LOCATION Much of the work is laboratory-based, although experienced microbiologists may need to gather samples at a variety of locations.



THE REALITIES Laboratory work can be repetitive, especially for junior microbiologists. Competition for senior roles is intense.

CAREER PATHS

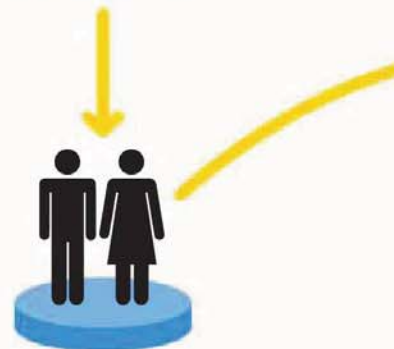
Qualified microbiologists can find jobs in many areas, including the health care, pharmaceutical, food, water, and agricultural industries. They will be expected to publish research papers to build their academic reputation and gain promotion.

LABORATORY TECHNICIAN

After leaving high school, you can start working as a laboratory technician, while studying for a degree part-time.



GRADUATE You will need a degree in life sciences, such as microbiology, applied biology, biomedical science, or molecular biology. A graduate-level degree will help you to progress to more responsible positions.



▼ RELATED CAREERS

- ▶ **BIOTECHNOLOGIST** *see pp. 136–137*
- ▶ **PHARMACOLOGIST** *see pp. 140–141*
- ▶ **CLINICAL BIOCHEMIST** Carries out complex experiments to analyze samples of blood, urine, and body tissue. Clinical biochemists use their findings to make recommendations about new treatments and further research.
- ▶ **IMMUNOLOGIST** Studies the immune system and helps devise new diagnostic tools, therapies, and treatments. Opportunities exist in research centers, hospitals, and in pharmaceutical companies.
- ▶ **TOXICOLOGIST** Conducts experiments to find out the impact of toxic and radioactive materials on people, animals, and the environment.

SKILLS GUIDE

-  Good team-working skills for collaborating with other scientists and manufacturers.
-  An innovative approach to scientific experiments. A desire to challenge existing ideas.
-  Good organizational skills for managing complex experiments and large amounts of data.
-  The ability to solve difficult problems using logic and a sound experimental approach.
-  The perseverance to continue searching for solutions, even in the face of repeated failures.
-  Attention to detail when taking measurements, making calculations, or studying data.

RESEARCH

MICROBIOLOGIST Studies the effects and uses of microorganisms in a wide range of areas. They usually combine research with teaching undergraduates.



CLINICAL MICROBIOLOGIST Works on identifying disease-causing microbes and developing ways to treat disease and prevent its spread. They are usually based at a hospital or clinic.

PATENT EXAMINER Assesses an application for a patent, which are granted to inventors to give them the right to prevent other people from using, selling, or making their inventions.

PHARMACEUTICAL SALESPERSON Uses specialized knowledge to work in sales for pharmaceutical companies. They sell their products to doctors, researchers, and other companies in the medical field.

MICROBIOLOGIST You conduct experiments on microorganisms to gain a better understanding of why they can be harmful to humans and crops and to see whether they can be used for human benefit.