

2121 Biologists and Related Scientists

Biologists and related scientists conduct basic and applied research to extend knowledge of living organisms, to manage natural resources, and to develop new practices and products related to medicine and agriculture. They are employed in both laboratory and field settings by governments, environmental consulting companies, resource and utilities companies, chemical, pharmaceutical and biotechnical companies and health and educational institutions.

Example Titles

- agricultural scientist
- agriculture research officer – military
- agrogeologist
- algologist
- anatomist
- animal ecologist
- animal geneticist
- animal nutritionist
- animal taxonomist
- aquatic biologist
- bacteriologist
- bacteriologist – animal health
- bioinformatician
- biological scientist
- biologist
- biologist, enzymology
- biologist, medical parasitology
- biologist, parasitology
- biologist, protozoology
- biologist, veterinary parasitology
- botanist
- bryologist
- cell biologist
- cellular physiologist
- crop scientist
- crop-research scientist
- cytochemist
- cytogeneticist
- cytologist
- cytologist-microbiologist
- dairy bacteriologist
- dairy scientist
- descriptive toxicologist
- developmental biologist
- developmental geneticist

- domestic animal scientist
- ecobiologist
- ecologist
- economic botanist
- embryologist
- entomologist
- entomologist, apiculture
- environmental and occupational toxicologist
- environmental biologist
- environmental toxicologist
- enzymologist
- enzymology biologist
- etiologist
- fishery bacteriologist
- fishery products bacteriologist
- food bacteriologist
- food products bacteriologist
- food products scientist
- food research scientist
- food scientist
- forest ecologist
- forest pathologist
- geneticist
- helminthologist
- herpetologist
- histologist
- histopathologist
- human physiologist
- hydrobiologist
- ichthyologist
- immunologist
- industrial bacteriologist
- insect physiologist
- interpretative naturalist
- invertebrate zoologist
- laboratory immunologist
- limnologist
- malariologist
- mammalogist
- marine biologist
- marine hydrobiologist
- marine mammal trainer
- mechanistic toxicologist
- medical parasitology biologist
- microbiologist
- molecular biologist

- molecular geneticist
- molecular physiologist
- mycologist
- naturalist
- nematologist
- ornithologist
- osteologist
- parasitologist
- parasitology biologist
- park naturalist
- pathologist, forests
- pathologist, plants
- pharmaceutical bacteriologist
- pharmacologist
- physiological biophysicist
- physiologist
- physiologist-biochemist – nuclear medicine
- phytobiologist
- phytopathologist
- plant anatomist
- plant breeder
- plant ecologist
- plant nematologist
- plant pathologist
- plant physiologist
- plant population biologist
- plant scientist
- plant taxonomist
- population geneticist
- poultry scientist
- protozoologist
- protozoology biologist
- public health bacteriologist
- regulatory toxicologist
- research biologist
- research officer, agriculture – military
- rural ecologist
- serologist
- soil bacteriologist
- staff toxicologist
- systematist, biology
- systems biologist
- taxonomist, biology
- toxicologist
- veterinary parasitology biologist
- virologist

- wildlife biologist
- wildlife helminthologist
- wildlife naturalist
- zoologist

Main duties

Biologists perform some or all of the following duties:

- Plan and conduct studies of the environment, and of the population, distribution, structure and functional characteristics and behaviour of plants and animals
- Conduct ecological and environmental impact studies and prepare reports
- Study, identify and classify plant and animal specimens
- Conduct experiments in plant or animal growth, heredity and breeding
- Prepare reports and plans for management of renewable resources
- May supervise biological technologists and technicians and other scientists.

Microbiologists and cell and molecular biologists perform some or all of the following duties:

- Conduct research into the structure, function, ecology, biotechnology and genetics of micro-organisms, including bacteria, fungi, protozoans, and algae
- Conduct research into the structure and functioning of human, animal and plant tissues and cells
- Conduct studies into the identification, effects and control of human, plant and animal pathogens and toxins
- Conduct clinical or laboratory studies to test, evaluate and screen drugs and pharmaceuticals
- Conduct molecular or biochemical studies and experiments into genetic expression, gene manipulation and recombinant DNA technology
- Conduct research to discover, develop and refine, and evaluate new products
- May participate in the commercialization of new products
- May supervise biological technologists and technicians and other scientists
- May conduct biostatistical data analysis using computer modelling techniques.
- Biologists and related scientists may specialize at the macroscopic level, in fields such as botany, zoology, ecology and marine biology or, at the cellular and molecular level, in fields such as genetics, immunology, pharmacology, toxicology, physiology, pathology, bacteriology and virology.

Employment requirements

- A bachelor's degree in biology or in a related discipline is required for biologists.
- A master's or doctoral degree in biology or a related discipline is required for employment as a research scientist in biology.

- Post-doctoral research experience is usually required before employment in academic departments or research institutions.

Classified elsewhere

- Biochemists (in [2112](#) *Chemists*)
- Specialists in laboratory medicine (in [3111](#) *Specialist Physicians*)