

Physiologist Encyclopedia Article

Physiologist

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Physiologist

Physiologists study the functions and activities of organisms—the way plants and animals are designed as well as how they interact with their environment. This includes functions and activities at the cellular and molecular level, both under normal and abnormal conditions. Physiologists may choose to specialize in any of the life processes, including growth, reproduction, aging, and metabolism, or the circulatory, nervous, or immune systems.

Notable physiologists include scientists such as American Dr. Matilda Brooks, who developed antidotes for cyanide and carbon monoxide poisoning. The Scottish physiologist Sir Charles Bell (1774-1842) described the central nervous system in human beings. A British physiologist, Edgar Adrian, shared a Nobel prize in 1932 for his work in determining the electrical nature of nerves and muscles, and later went on to codevelop the electroencephalograph which measures brain activity.

All physiologists require a background in physics and computer science with an emphasis on biological sciences such as microbiology, **ecology**, evolution, **genetics**, and **behavioral** biology. Physiologists work in either applied or basic research. Physiologists with a masters degree generally do applied research at companies interested in developing specific solutions to health problems or restoring the environment. They should be familiar with high-tech laboratory equipment such as electron microscopes, thermal cyclers, and nuclear magnetic resonance machines. They must also be able to communicate well with nonscientists.

Physiologists who pursue a Ph.D. spend additional time in laboratory research and in writing a dissertation. Frequently they go on for several years of post-doctorate work in their area of interest. Physiologists who specialize in basic research tend to work at universities, where they are funded by scientific grant money. Usually their work consists of doing original research, overseeing graduate students, and teaching. Unlike applied researchers, basic researchers are free to pursue knowledge for its own sake without the constraints of producing a practical product. This can lead to exciting discoveries, as they follow their curiosity into the mysteries of the world within and without.

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