**Physiology is the study of life**, specifically, how cells, tissues, and organisms function. Physiologists are constantly trying to answer key questions in areas ranging from the functions of single cells to the interactions between human populations and our environment here on earth, the moon, and beyond. To answer these questions, physiologists work in laboratories, in libraries, in the field, and in space. For example, a physiologist may study how a particular enzyme contributes to the functions of a specific cell or subcellular organelle. A physiologist may use the simple nerve networks found in marine snails to answer questions about the fundamental mechanisms of learning and memory. A physiologist may investigate the cardiovascular system of an animal to answer questions about heart attacks and other human diseases. Physiologists may study how the body adapts to temperature and environmental extremes encountered on earth, or the zero gravity encountered in space flights, to learn how life processes cope with these environmental stresses.

Physiology is important because it is the foundation upon which we build our knowledge of what "life" is, how to treat disease, and how to cope with stresses imposed upon our bodies by new environments. Physiological studies of normal biological function provide the basis for understanding the abnormal function seen in animal and human disease (pathophysiology) and for developing new methods for treating those diseases (translational research). Many physiologists place great importance on the use of animal models as an important tool in their research.

The study of physiological processes can encompass a wide array of other disciplines, such as neurophysiology, pharmacology, cell biology, and biochemistry, to name just a few. Physiologists can often be found as members of these other departments, in addition to departments of physiology.