



Biophysics

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Definition

The discovery and application of physical principles, methods and theories relevant to the study of living organisms and life processes.

Discussion

Biophysics has been described as a subject lying at the borders of biology, physics, chemistry, mathematics, engineering, genetics, physiology and medicine. Studies include the biophysics of movement, electrophysiology, membrane physics, the three-dimensional structure of proteins, protein-DNA interactions, glycoprotein structure and function, gene expression, and network theories applied to cellular metabolism and macromolecular interactions. The study of biophysics has led to the development of new instrumentation and methods of discovery that have had profound effects on our understanding of chemistry, biology and medicine, including light microscopy, X-ray crystallography, nuclear magnetic resonance spectroscopy, and circular dichroism spectroscopy.

Scope and emphasis

NLM collects works in biophysics, including theoretical and computational biophysics, as applied to molecular biology, biochemistry, physiology (from the cell to the organism), and any research with implications for the practice of medicine, biomedical engineering or biomedical research.