

Concept of Bioinformatics – 1/5

Simply, bioinformatics is the science of storing, retrieving and analysing large amounts of biological information.

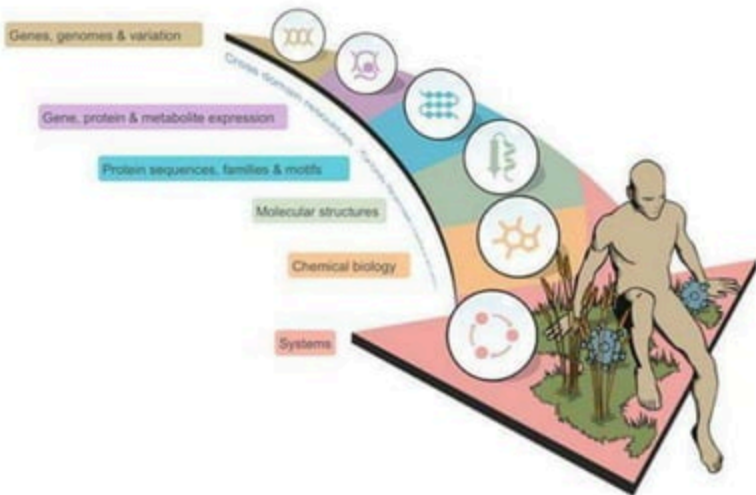
It is a highly interdisciplinary field involving many different types of specialists, including biologists, molecular life scientists, computer scientists and mathematicians.

Concept of Bioinformatics – 2/5

The term bioinformatics was coined by Paulien Hogeweg and Ben Hesper to describe "the study of informatic processes in biotic systems" and it found early use when the first biological sequence data began to be shared.

Whilst the initial analysis methods are still fundamental to many large-scale experiments in the molecular life sciences, nowadays bioinformatics is considered to be a much broader discipline, encompassing modelling and image analysis in addition to the classical methods used for comparison of linear sequences or three-dimensional structures.

Concept of Bioinformatics – 3/5



Concept of Bioinformatics – 4/5

Traditionally, bioinformatics was used to describe the science of storing and analysing biomolecular sequence data, but the term is now used much more broadly, encompassing computational structural biology, chemical biology and systems biology (both data integration and the modelling of systems).

Concept of Bioinformatics – 5/5

The molecular life sciences have become increasingly data driven by and reliant on data sharing through open-access databases.

This is as true of the applied sciences as it is of fundamental research.

Furthermore, it is not necessary to be a bioinformatician to make use of bioinformatics databases, methods and tools.

However, as the generation of large data-sets becomes more and more central to biomedical research, it's becoming increasingly necessary for every molecular life scientist to understand what can (and, importantly, what cannot) be achieved using bioinformatics, and to be able to work with bioinformatics experts to design, analyse and interpret their experiments.