

# II INTERNATIONAL SYMPOSIUM ON SCIENCE AND BIOTECHNOLOGY ENTREPRENEURSHIP AND INNOVATION

## STRUCTURAL ANALYSIS OF BIOMOLECULES

Carlos Alexandre Breyer

Doutor em Biotecnologia

Faculdade de Ciências Farmacêuticas - FCF/USP

ABSTRACT

### Abstract

Understanding the molecular structure of biomolecules has revolutionized biology and medicine, and it is possible to understand at a molecular level the events that govern life. This understanding has enabled a revolution in medicine to develop new drugs based on structural analysis and the molecular understanding of diseases, whether genetic or caused by pathogenic organisms. Nowadays new methodologies have been outstanding in structural biology, a highlight is given to cryo-electron microscopy, a revolutionary methodology that has been helping the classical X-ray crystallography. So much stands out the importance of cryo-electron microscopy that is laureated with the Nobel Prize in Chemistry of the year 2017 to its developers. In the mini-course offered in this event we take the participants a sample of the possibilities of the structural analysis of biomolecules, presenting the main techniques used, as well as analysis programs that allow better understanding of the structures of biomolecules such as nucleic acids and proteins.

Keywords: X-ray crystallography. Structural biology. Biomolecules.

E-mail: [carlosbreyer@gmail.com](mailto:carlosbreyer@gmail.com)>