

Workshop on Recent Applications of Bioinformatics and Ecoinformatics (WBE 2015)

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Foreword

Bioinformatics, the application of state-of-the-art computational technologies to analyse the information related to biomolecules for understanding their biological processes and regulation of gene expression and protein functions, has now become an important discipline in a wide range of molecular biology areas including systems biology, genomics and transcriptomics. Ecoinformatics, the management and analysis of environmental information through the application of computer technology, is also a rapidly developing area in ecology that facilitates large-scale research associated with natural resources.

The workshop of Bioinformatics and Ecoinformatics (WBE 2015) was held at Botany Department, Faculty of Science, Tanta University, Egypt in September 2015. The first objective of this workshop was to provide an up-to-date introduction into basics and applications of bioinformatics in biological research using public data resources. It provided a complete picture of the current knowledge on different genomics technologies along with various software packages and bioinformatics tools to analyse, integrate and interpret biological data. The second objective of this workshop was to provide informatics tools and packages including Turboveg program to analyse available phytosociological database for vegetation regions in order to more efficiently manage natural resources, as well as to meet continued increases in natural resources demand.

This workshop was aimed at postgraduate students, academic researchers and professionals who are interested in the application of bioinformatics and ecoinformatics techniques in biological research projects. The workshop program included theoretical lectures from recognized experts with highly intensive and practical sessions. Tremendous number of scientists, academics and graduate students have participated in this workshop, a venue that created an excellent environment for acceleration of recent applications that benefit research and science worldwide.

The workshop provided participants with a solid conceptual framework of the application of bioinformatics and ecoinformatics to biological research as well as with the up-to-date methodological skills required. Participants also gained knowledge and comprehension of the following subjects: (i) Genomics technologies and the nature of the biological data generated, (ii) Searching and retrieving biological data from public repositories, (iii) Use of several bioinformatics and ecoinformatics software packages and tools to explore, analyse, integrate and manage biological data, (iv) Promoting the cause of conservation of natural resources with emphasis on biodiversity, (v) The methodologies for regenerating environmentally degraded areas, promoting public participation and broadening of the general scientific and environmental outlook, and (vi) A new spirit for phytosociological research and a set of new initiatives to overcome ecological and environmental challenges.

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