Chapter 2

Library Services for Bioinformatics:
Establishing Synergy Data Information and Knowledge

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ABSTRACT

Bioinformatics is an emerging data intensive discipline. The community and information resources and sources are heterogeneous. It is the role of library to provide a comprehensive platform to deliver effective information services to the community. The paper discusses the status of various bioinformatics information resources available for the community. It is essential to search, consolidate and made information resources available to the community. The paper also discusses the methodology for integration of information resources at a single platform. The integration platform is proposed shall highlight the role of the library in understanding the current best practices to deliver effective information to bioinformatics community. It will discuss the close relationship between data and information playing an extensive role in generation of bioinformatics knowledge. Further, a model has been proposed for the resource integration in the area of bioinformatics in order to provide a comprehensive platform for knowledge dissemination.

INTRODUCTION

Medical informatics, health informatics, clinical informatics and bioinformatics are newly emerged disciplines in the subject tree, where application of Information Technology (IT) in management of information constitutes a major activity. There are various debates going on amongst the health, medical, information and computer professionals about the scope, activities and support to these fields through application of IT. The development of information systems to support the infrastructure of medical, understanding the needs of health professionals, managing data generated through clinical practices are some of the issues emerged which laid the foundation for supporting education, decision making, and communication. In this regard the emergence of Medical informatics recorded as a field which is concerns itself information professing for helping the tasks of medical practice, education, and research with the help of Information and communication Technology (ICT). Simultaneously, Health Informatics and Clinical Informatics are being used to cover the various aspects of informatics whereas bioinformatics is the convergence of biology for research, development, or application of computational tools and approaches for expanding the use of biological, medical, behavioral or health data, including those to acquire, store, organize, archive, analyze, or visualize such data (Huerta 2000). Historically, the medical informatics originated about 50 years back when systematic approaches applied for processing of data information and knowledge related to medicine and healthcare. A detailed discussion on the origin of the medical informatics was first reported by Collen in 1986 (Collen, 1986).

The biggest leap in the field of 'informatics' achieved with the emergence of 'Bioinformatics' as new discipline after completion of 'Human Genome Project' (HGP) in 2003 (Lim, 2000). The completion of HGP is supposed to be the main root for the origin of bioinformatics. The word conceptualized in 1980s, flourished in 1990s and become one of the major data extensive fields of research in last decade. The completion of HGP poses new challenges in front clinicians, scientists, doctors and researchers as huge amount of data generated in the form of sequences of organism and plants.

Both Medical Informatics and Bioinformatics now playing crucial role in the study related to genome, developing diagnostic test, updating genetic and medical data in clinical practice. At the same time libraries and information centers are shifting their roles and adopting the technological advancement fueled by information technology, bioinformatics, and networked information. These developments are changing both the role of library as well as context of information delivery systems for the subject (medical informatics, bioinformatics) as well as people (doctors, clinicians). The changes have reflected in the library various library activities and reflected the how patients, health care providers, researchers, policymakers, and

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