

## **TRENDS IN BIOINFORMATICS RESEARCH AND SINGAPORE'S ROLE**

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The universe of biological data emanating from a variety of technologies continues to expand at almost alarming rates. Novel technologies addressing views of the complex biological systems in near molecular resolution have emerged with breakthroughs in the ultra-high throughput DNA sequencing, transcript (mRNA) profiling as whole genome biosensors, and protein profiling strategies based in the core technologies of analytical chemistry and mass spectrometry. We are now in a world where scientists can examine a biological system at a high level of resolution that exceeds their capacity to understand the results in supporting or refuting the hypothesis. The large volumes of data generated through these technologies have necessitated the need to be able to manage, analyze, synthesize, distribute and generate coherent knowledge. This presentation will review the challenges and opportunities in Bioinformatics, including issues with functional annotation of proteins, Systems Biology approaches to mine databases, Biomarker discovery, etc. Some of these challenges and ongoing efforts at addressing these in Singapore will be discussed.