Opening Address by Mr Lim Chuan Poh, Chairman of A*STAR at the Launch of the International Conference on Bioinformatics 2009, 9am, 9 September 2009, Biopolis

Professor Shoba Ranganathan,

President of the Asia Pacific Bioinformatics Network,

Members of the 8th International Conference on Bioinformatics Organising Committee,

Distinguished guests,

Ladies and Gentlemen,

A very good morning to all of you.

Introduction

First, let me extend a very warm welcome to all of you to this conference.

For our international participants, let me also welcome you to Singapore.

Singapore and A*STAR are very honoured that the organisers have chosen to hold the 8th International Conference on Bioinformatics in Singapore.

I am personally delighted to be here this morning to open the conference.

Bioinformatics / Computational Biology Research in Singapore

Bioinformatics plays a critical role in Singapore's vision to be a world class international hub for the biomedical sciences.

It is an inter-disciplinary approach that integrates computational and biological expertise to analyse biological data to advance biomedical research and development.

Today, biomedical researchers have to handle large amounts of data from genome sequencing, microscopy, or high-throughput analytical techniques for DNA, RNA, and proteins.

Together with the rapid advancements in computing power, scientists are able to computationally model and analyse biological systems in novel ways.

Indeed, one of the greatest achievements of bioinformatics is the possibility of reliably predicting the function of a protein from sequences and structures within the homology concept.

Singapore has a growing research community on bioinformatics.

You can find them in A*STAR's Bioinformatics Institute, Genome Institute of Singapore, and Institute for Infocomm Research.

Likewise, you can bioinformaticians in the National University of Singapore and the Nanyang Technological University.

All in, there are probably about 150 RSEs working on bioinformatics in academia and industry.

Since 2007, Singapore has hosted several conferences on computational biology and bioinformatics.

These include the International Conference on Genome Informatics in 2007, the Research in Computational Molecular Biology in 2008, the EMBO Practical course in Computational Biology in 2008, and of course, the conference this year.

As Asia's largest event in terms of number of attendees, this conference will showcase publications in three different journals *BMC Bioinformatics, BMC Genomics* and *Bioinformation*.

Singapore's Achievements in Bioinformatics

Let me now share with you a few of Singapore's achievements in the field of bioinformatics.

Singapore has attracted international drug and life sciences companies with the growth of our research capability and government funding in bioinformatics.

For your information, A*STAR has committed close to $100 million in funding to the Bioinformatics Institute for this 5 year plan from 2006 to 2010.

Likewise, Eli Lilly now base a significant portion of their bioinformatics activities in the Lilly Singapore Centre for Drug Discovery.

Although the bioinformatics community in Singapore is still relatively small, Singapore contributes 1.73% of papers published in Bioinformatics since 2000.

This percentage contribution is about the same as that of countries like South Korea and Israel.

More recently, Dr Sebastian Maurer-Stroh and his team from A*STAR's Bioinformatics Institute were the first in the world to show how bioinformatics and computational biology can contribute to managing the H1N1 influenza A_1 virus.

Their paper "Mapping the sequence mutations of the 2009 H1N1 influenza A virus neuraminidase relative to drug and antibody binding sites", was published in *Biology Direct*, a peer-reviewed journal on 20 May 2009.

The team demonstrated the use of a computational 3D structural model of the protein to map the regions of the protein that have mutated, and determine if drugs and vaccines that target specific regions of the protein were effective.

This is useful in developing strategies for fighting the H1N1 virus.

Last year, Dr Victor Tong from the Institute of Infocomm Research and President of the Association for Medical and Bioinformatics for Singapore (AMBIS), was selected as one of MIT's Technology Review top 35 innovators in science and technology under the age of 35 for his research in "personalized vaccine design".

Research Environment in A*STAR

With cross-council collaborations between the biomedical sciences researchers in Biopolis and the science and engineering researchers in Fusionopolis, A*STAR has opened up a rich and vibrant space for new knowledge creation and innovation.

We welcome you to visit our institutes in Biopolis and Fusionopolis.
Perhaps some of you may consider pursuing your PhD or taking up positions in our institutes.
Each year, A*STAR gives out generous scholarships and investigatorships to students and researchers.
We also look forward to collaborations between our researchers and you.

Recent International Collaborations

Beyond building collaborations within A*STAR and with the local R&D community, I am glad to note that the organisers have also been active in collaborating with bioinformatics institutes worldwide.
First it is the collaboration between a home-grown company, Wizfolio, and the Association for Medical and Bioinformatics for Singapore (AMBIS), and the Asia Pacific Bioinformatics Network (APBioNet).
With Internet access, Wizfolio reference management system allows for easy management of bibliographic data, and takes away the hassle of manually entering all the bibliographical data for a reference.

The collaboration between Wizfolio, AMBIS and APBioNet will not only provide respective members access to Wizfolio reference management system, it will also explore new ways to improve the process of scientific peer review activities.

I am therefore pleased to be able to witness the signing of a Memorandum of Understanding to formalise this collaboration on a new global bibliographic service.

Secondly, members of the Asian Bioinformatics Centre Initiative will be launching their Asian Bioinformation Repository Initiative tomorrow, and they will also sign the Singapore Resolution for Minimum Information about a Bioinformatics Investigation, or the MIABi initiative.

This is an acronym coined by Dr. Victor Tong, the Chairman of the Organising Committee.

A mounting problem in bioinformatics research is the existence of defunct databases and inaccessible online resources that were cited for an experimental analysis.

The MIABi initiative aims to tackle this issue of disappearing databases and lack of reproducibility of bioinformatics resources, by establishing a process for increasing scientific accountability, promoting reproducibility, facilitating persistence of bioinformatics databases and resources, and introducing provenance into bioinformatics research protocols.

Thirdly, it is about the new initiatives from InCoB.

Participants of the Workshop on Education in Bioinformatics and Computational Biology (WEBCB), have set out to launch their Singapore Declaration of best practice in bioinformatics training and education and to establish the minimum bioinformatics skill sets for graduate and undergraduate courses in bioinformatics.

Finally, yesterday's inaugural CBAS Symposium marked the launch and formation of a Clinical Bioinformatics Consortium that aims to seek representatives from institutions in Singapore and the region to strengthen ties and build up strong links for collaborations in the field of Clinical Bioinformatics.

Conclusion

In conclusion, it is a great honour that bioinformatics leaders worldwide have chosen to come to Singapore.

For our international participants, let me welcome you once again and hope you will be able to extend your stay to get to know this small nation state better.

To our organisers, congratulations on a job well done.

To everyone present, let me wish you a fruitful conference.

On this note, let me now announce the International Conference on Bioinformatics officially launched.

Thank you.