

Speech by Dr Tony Tan Keng Yam, Chairman of the National Research Foundation at the 2006 Induction Ceremony and Dinner held on Friday, 28 April 2006

Professor Low Cheng Hock
Master, Academy of Medicine, Singapore
Distinguished Guests
Ladies and Gentlemen
Good evening

I would first like to thank the Academy of Medicine for kindly inviting my wife and me to join you at your Induction Dinner this evening.

I would also like to thank the Academy for conferring on me the Honorary Fellowship of the Academy and for providing me this opportunity to address you. Also, my heartfelt congratulations to the Inductees...

Background of Medicine in Singapore

Medicine has come a long way in Singapore, since the establishment of Singapore's first medical school, then called the Straits Settlements and Federated Malay States Government Medical School, on Outram campus grounds in 1905.

Over the years, the Medical School has trained generations of doctors, who have served Singapore well and many of whom have gone on to help Singapore make a mark in the global medical landscape.

Together with good supporting infrastructure and ancillary healthcare personnel, the steady stream of capable doctors produced by our Medical School has enabled us to deliver high standards of healthcare for our population.

Almost 50 years ago, the Academy of Medicine, Singapore was founded. The formation of the Academy in 1957 signalled the beginning of establishing postgraduate medical education in Singapore on a firm footing. Over the years, the Academy of Medicine has evolved into a significant institution responsible for the training of specialists.

The Academy has helped to upgrade quality healthcare for our people by providing training, exit examinations, continuous learning and maintenance of high professional standards. Through the years, the Academy has also tapped on the expertise of overseas experts and specialist colleges.

The Academy's E-learning system is helping specialists to update themselves. And with the formation of the colleges within the Academy, I am confident that the Academy will play a bigger role in ensuring an efficient and effective world class healthcare system for our country and our people.

Leveraging on our strong foundation in healthcare services delivery and with a unique combination of factors, such as our multi-ethnic population, well documented disease registries and seamless coordination among various government agencies, we were able to build up the Biomedical Sciences industry rapidly since the launch of the Biomedical Sciences (BMS) Initiative in 2000.

Progress of the BMS Initiative

Our vision is for Singapore to become a leading international biomedical sciences cluster of advancing human health, producing world-class research and creating new areas of growth for the Singapore economy.

To achieve this objective, we need to build up a whole range of biomedical sciences related activities from basic upstream research to downstream product development; from manufacturing to headquarters functions and the delivery of high quality healthcare services.

After 5 years, our Biomedical Sciences Initiative is showing some promising results. From a very low base, the Biomedical Sciences Industry in Singapore has grown by 2005 to account for 9% of Singapore's total manufacturing output and 18% of manufacturing value-added. Last year, the Biomedical Sciences industry contributed a total of 5% to Singapore GDP and employed over 10,000 workers.

Breakthroughs in the Area of Basic Upstream BMS Research

Singapore has become a contributor of knowledge in the global biomedical sciences arena and plays a role in the global understanding of human diseases and medical processes.

Prior to 2000, Singapore had only one full-fledged biomedical research institute – the Institute of Molecular and Cell Biology (IMCB). Today, besides IMCB, four more institutes: the Bioprocessing Technology Institute, the Genome Institute of Singapore, the Bioinformatics Institute and the Institute for Bioengineering and Nanotechnology have been established.

All these institutes are located at the iconic research park which is called Biopolis, which offers world-class research facilities and infrastructure in an attractive environment that supports collaboration and multi-disciplinary research.

Let me highlight 2 examples of recent scientific achievements: last year, the IMCB discovered that the

naturally occurring protein Apoptosis Inducing Factor, or AIF, actually maintains rather than induces death of malignant cancer cells. This finding in upstream basic cancer research may pave the way for the development of a new class of cancer drugs in the future.

Also last year, scientists in the Singapore General Hospital (SGH), together with the National University of Singapore (NUS) and IMCB, made a major research breakthrough when they found that fetal stem cells are able to cross the blood-brain barrier into the mother's brain during pregnancy and carry out cell differentiation. This discovery opens up new possibilities in non-invasive cell-based therapy for neuro-degenerative diseases.

Next Phase of BMS Development in Singapore – Focus on Translational and Clinical Research

As we continue to advance knowledge in the biomedical sciences area, we have to chart the path for the next phase of BMS development in Singapore.

In order for Singapore to continue to be well regarded in the area of healthcare provision and service delivery, we need to focus on translating some of the basic biomedical sciences discoveries into more downstream drugs, procedures, methods and therapies.

Similarly, in order for Singapore's healthcare services delivery to continue to advance, we need to invest in more downstream translational and clinical research capabilities.

To do world-class translational and clinical research in Singapore, we need to build up a critical mass of biomedical sciences research talent feeding into the system, as well as the more downstream clinical research manpower and clinician-scientists, to ask the right questions and to find the right answers from a disease-specific perspective.

This pool of talent needs to be encouraged and built up, both by focusing on local education and training programmes, as well as attracting foreign talent to Singapore. But this is not sufficient.

We also need to significantly strengthen our regulatory frameworks such as the Institutional Review Boards and health regulatory bodies.

Finally, we need to put in place appropriate translational and clinical research infrastructure.

To achieve our objectives, the Ministry of Health (MOH), the Ministry of Education (MOE) and the Ministry of Trade & Industry (MTI) and the respective agencies and Statutory Boards under their charge, will have to co-operate closely and work as equal partners and co-owners of the Biomedical Sciences Initiatives to ensure alignment of goals and smooth implementation of the plans.

Biomedical Sciences Review Committee (BSRC)

To chart the course for the next phase (2006-2010) of our Biomedical Sciences Initiative, I have established a Biomedical Sciences Review Committee (Annex A) with the following 3 objectives

- i) to consider the proposed plans of MOH, MOE, Agency for Science, Technology and Research (A*STAR) and other relevant agencies;
- ii) to develop a holistic set of goals, strategies and plans to substantially strengthen translational and clinical research in Singapore; and
- iii) to recommend how these objectives can be achieved through the co-ordinated efforts of the various agencies.

Annex A. Biomedical Sciences Review Committee (BSRC) Members

No.	Name	Organisation
1	Prof Tan Chorh Chuan	Chairman, BSRC Provost & Deputy President National University of Singapore
2	Ms Yong Ying-I	Permanent Secretary for Health Ministry of Health
3	Prof K Satku	Director, Medical Sciences Ministry of Health
4	Prof Malcolm Paterson	Scientific Director SingHealth
5	Perry Lim	Director, Higher Education (designate) Ministry of Education
6	Prof John Wong	Dean, Yong Yoo Lin School of Medicine National University of Singapore
7	Prof James Tam	Dean, School of Biological Sciences Nanyang Technological University
8	Dr Patrick J Casey	Senior Vice Dean, Research Graduate Medical School
9	Mrs Danielle Heng	Director, Research & Enterprise Division Ministry of Trade and Industry
10	Dr Andre Wan	Director, Biomedical Research Council Agency for Science, Technology and Research
11	Dr Beh Swan Gin	Director, Biomedical Sciences Group Economic Development Board

The Committee will be chaired by Professor Tan Chorh Chuan, the former Director of Medical Services in MOH and who's presently Provost and Deputy President of the National University of Singapore and Deputy Chairman of A*STAR.

The Committee will include representatives from MOH, MOE and MTI as well as A*STAR, Economic Development Board (EDB), NUS, Nanyang Technological University (NTU), Duke-NUS Graduate Medical School and SingHealth.

The Committee will also identify gaps in research funding and suggest areas where the National Research Foundation (NRF) can best assist in the BMS effort.

The BSRC will submit its report and recommendations for endorsement to the NRF Board at its meeting in June before presenting its plans to the Research, Innovation and Enterprise Council chaired by the Prime Minister in early July for approval.

Conclusion

Medicine is going through an exciting time with major discoveries in genomics, development biology and treatment of diseases and human disorders.

Singapore's biomedical sciences initiative can contribute to the global knowledge process and help to answer questions that will improve the human health condition.

I look forward to the continued work of the Academy and contribution of the biomedical sciences initiative to Singapore over the coming years.

I wish you all a very pleasant evening ahead.

Thank you.