



## SMA News Interviews Chairman A\*STAR, Mr Lim Chuan Poh

*Mr Lim Chuan Poh with Mr Philip Yeo, Chairman of Spring Singapore and scholars at Harvard.*

**M**r Lim Chuan Poh was appointed Chairman A\*STAR on 1 April 2007 to lead A\*STAR in conducting world-class scientific research and developing human capital for a vibrant knowledge-based and innovation-driven Singapore.

Mr Lim has been a board member of A\*STAR's Biomedical Research Council since January 2004 and the National Research Foundation since January 2006. He was appointed as Deputy Chairman A\*STAR in November 2006.

Prior to helping A\*STAR, Mr Lim was Permanent Secretary at the Ministry of Education (MOE) since July 2004. He attended the Advanced Management Programme at Harvard Business School in 2003 before assuming the appointment of Second Permanent Secretary, Ministry of Education, in July 2003. In an ex-officio capacity, he also chaired the Academic Research Board in MOE, the National Institute of Education and co-chaired the Interactive

& Digital Media Executive Committee. He has also been a Board Member of NTU since 2003.

During his time with MOE, among other things, Mr Lim oversaw the transformation of the publicly funded universities into Autonomous Universities (AUs) to enable them to reach new peaks of excellence. He also reviewed the university research framework that led to the creation of the Academic Research Council and a new Academic Research Funding Framework. The framework for the polytechnics to tie up with top foreign institutions to offer degree programmes in specialised areas was also put in place. In addition, he guided the establishment of the NUS-Duke Graduate Medical School at Outram Campus.

Before joining MOE, LG(NS) Lim Chuan Poh also spent 23 years with the Singapore Armed Forces and last held the office of the Chief of Defence Force.



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◀ Page 1 – Interview with Mr Lim Chuan Poh

**SMA News:** Some observers have likened research to a financial investment. Low-risk projects are likely to generate faster results, but may be incremental and have lower impact – whereas high-risk projects may be slow to see fruition, may fail badly but may also have the potential to generate spectacular and groundbreaking results and even Nobel Prizes. What kind of investment portfolio would you describe the Biomedical Sciences Initiative as?

**Mr Lim:** The Biomedical Science Initiative (BMSI) is one of several prongs of Singapore's drive towards becoming a knowledge-based innovation-driven economy. Together with initiatives in many other sectors such as info-comms, new media, water technologies, clean energy, and financial services, Singapore is building up its competitiveness for the future and expanding our economic space. Each of these initiatives is different and taken together, they will provide Singapore with a sufficiently diverse portfolio of approaches going forward.

The BMSI itself comprises a variety of strategies. These range from producing enough scientific talent to meet industry needs in this sector to enlarging our contribution in the arena of drug discovery. We have taken a progressive approach to our BMSI by building on our existing strengths in the manufacturing of pharmaceutical products as well as our excellent healthcare delivery system and expanding that as we strengthen our capabilities in basic, clinical and translational research. The overarching aim is to create as much economic value for Singapore as possible through high value jobs, opportunities for local start-ups and SMEs, as well as attraction of investments from MNCs. The fundamental starting point, however, is good science and this is an area where we are placing great emphasis. In the process, should one of our scientists win a Nobel Prize in recognition of their contribution to science and humanity, it will be a good bonus.

The research agenda that supports the BMSI comprises both a directed thematic approach and a more ground-up investigator-led approach. Directed research programmes are built around strategic thematic areas that have been selected based on their impact on the health of Singaporeans and the available or potential research strengths that we have in those areas. Careful planning has gone into ensuring that these programmes make the best use of finite resources, avoid duplication and derive synergy



Mr Lim Chuan Poh.

by bringing the appropriate teams of people together.

On the other hand, grants support for investigator initiated projects recognise the importance of providing sufficient space and resources for the bubbling up of ideas from the ground. From experience, it is not uncommon for some of the most impactful research results to emerge serendipitously from these projects.

**SMA News:** Comparing the biomedical thrusts of other Asian countries such as Japan, Korea, China and India, what strategic directions should Singapore take to increase its scarcity power and competitive advantage?

**Mr Lim:** The sensible thing for Singapore to do is to leverage on our strengths to differentiate from our potential competitors while remaining on the lookout for opportunities to work with other countries as partners instead of competitors.

Firstly, we should leverage on our political stability and well-demonstrated ability to take a long-term view when planning and resourcing a strategic initiative. These provide foreign researchers and industries the necessary confidence to make very significant commitments to partner and participate with us in this endeavour. In this respect, we have

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an advantage over other countries where economic priorities shift frequently, resulting in a “feast or famine” scenario which is not conducive for R&D.

Secondly, we should leverage on our intrinsic advantages that make us an attractive site for translational and clinical research. We are geographically compact with an ethnically diverse population and a world-class, easily accessible and fairly integrated healthcare system. We also have a robust regulatory environment with sound ethical frameworks and a reputation for quality and safety. As such, we are well-suited to carry out early phase clinical trials and first-in-man studies which rely on small numbers of carefully selected patients who are closely monitored in an appropriate clinical setting.

Thirdly, we should leverage on our clear legal framework and our scrupulous protection of IP (intellectual property) rights. These conditions are not always a given in some other jurisdictions. Also, BMS R&D in Singapore is not at the mercy of extreme views and militant activities as it is in other countries.

Finally, we should also leverage on all the other reasons why Singapore has been so successful in attracting international companies and businessmen: our high quality business and living environment that makes us attractive to talent; our superb infrastructure and services; good connectivity to the rest of Asia; our cosmopolitan, English-speaking community; high standards of living and low crime rate; and our unique ability to work in a nimble, integrated fashion across agencies for the good of Singapore Inc.

**SMA News:** Do you see the development of academic entrepreneurship and a buzzing Silicon Valley-equivalent of a biomedical hub for Singapore’s R&D landscape and what steps are needed to achieve this?

**Mr Lim:** It is important to remember that Silicon Valley took many decades to establish itself and that it grew out of the sweeping industrial and technological changes taking place across North America at that time. Singapore is barely out of the starting gate and yet we have already begun to generate our own buzz.

As a trend, there is increasing interest across the world by public research institutions (RIs) to undertake early stage drug discovery and development, in order to advance drug candidates to

a stage where they are commercially more attractive to industry. Earlier this year, A\*STAR established the Experimental Therapeutics Centre (ETC), which aims to build up the required capabilities and resources for early stage drug discovery and development. This will be a channel not just for the researchers in A\*STAR, but also for those from the universities and hospitals, to allow their discoveries to be given a chance to be developed as a drug. ETC will also train young scientists and provide them with the necessary skill-set for drug product and business development. David Lane will be the CEO of ETC, to which he brings his own experience in setting up a biotech company from scratch, Cyclacel, which today is listed on Nasdaq. He has also assembled in ETC a team of people with strong industry background and experience in drug discovery and development.

**SMA News:** What are your views on the creation of Academic Medical Centres and what value will it bring to patient care? What initiatives are there to encourage more clinicians to enter research? Do you feel that our hospitals provide an adequate and conducive environment for research in the face of heavy clinical service and fiscal bottomlines as key obligations for the busy public hospitals?

**Mr Lim:** The BMS effort in Singapore is coordinated and led by the BMS Executive Committee (EXCO) which was re-constituted in July 2006 so that it would be focused on developing our capabilities for translational and clinical research (TCR), and brings basic science discoveries from the bench to the bedside. It also provides for bedside feedback to shape the bench agenda.

To ensure coordination and alignment in both planning and implementation, the EXCO is co-chaired by Chairman A\*STAR and Permanent Secretary, Health. The CEOs of both NHG and Singhealth are members of the EXCO together with the DMS, the Deans of the two medical schools as well as senior officials from MTI, A\*STAR and other relevant agencies. At the staff level, A\*STAR’s Biomedical Research Council (BMRC) works very closely with MOH’s National Medical Research Council (NMRC) to jointly develop and implement TCR programmes and initiatives.

Two initiatives in particular are worth highlighting. The first is to establish internationally competitive TCR flagship programmes in strategic areas such as cancer, cardiovascular/metabolic disorders, neurosciences, infectious diseases, and eye diseases. The second is the STaR (Singapore Translational Research) Investigatorship award which aims to

recruit world class clinician scientists and clinician investigators to join our own local doctors in the above-mentioned TCR flagship programmes. Resources for these two key initiatives are provided collectively by A\*STAR, MOH and NRE.

At the same time, BMRC will continue to provide support and collaborations for hospital researchers through our extramural grants and our research consortia. We will also be helping to develop key research infrastructure for TCR such as imaging facilities, tissue banks, and cohort studies. And we will also continue to help nurture clinician-scientists through our MBBS-PhD and MD-PhD scholarships.

We are also assisting NMRC with the process of revamping the Clinician-Scientist Awards to ensure that bright local clinician-scientists are provided with the level of support they require to be successful. NMRC has also recently made changes to its competitive research grants, in particular, the creation of the new Pilot and Development grant category, which would encourage young doctors to enter research.

The BMS Exco has been looking at how other systems, in particular, UK and US, are effecting TCR. Invariably, the TCR efforts in these countries are built upon the platform of the Academic Medical Centre. We will have to study how relevant this concept is to Singapore and how we can best adapt it to meet our particular requirements.

**SMA News:** There have been much talk on attracting the globally reputed star researchers to Singapore but there has been some criticism that not enough attention is being paid to nurturing a bigger local talent pool and bringing them further to the forefront. What are your views on this?

**Mr Lim:** A\*STAR put in a lot of time and energy to develop and expand the local talent pool. Each year, we run a series of outreach programmes that straddle the whole spectrum of the student population from elementary schools to junior colleges. I will describe these programmes in more detail later in this interview.

We are the only government agency that provides full scholarship support for young Singaporeans to earn a BSc degree and continue on to pursue a PhD. Since 2001, we have supported 394 BMS scholars, of which the first 25 have completed their PhDs and have commenced work at our RIs (research institutes). Another 30 are expected to

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return in 2007. These scholars have already begun to show their quality. For example, Teo Hsiang Ling, an NSS (National Science Scholarship) PhD scholar, published a first-authored paper in a prestigious scientific journal *Cell* in 2006; while Sebastian Ku, an AGS (A\*STAR Graduate Scholarship) PhD scholar, won the First Prize at the Novo Nordisk Poster Award in 2006.

We also have a number of very good homegrown scientific talents in our RIs. For example, Ng Huck Hui, a Singaporean who graduated from NUS, has distinguished himself in stem cell research at GIS, having published more than 20 papers in major international scientific journals. Huck Hui received the Singapore Young Scientist Award in 2004. Lisa Ng, another Singaporean at GIS who obtained her PhD in NUS, has made important contributions through her research work in SARS, avian flu and Hepatitis B. In 2005, Lisa was named the “Most Inspiring Woman” for her contribution to Science at the inaugural “Great Women of Our Time” Awards, organised by *Singapore Women’s Weekly* magazine.

BMRC and NMRC had jointly created the Clinician Scientist Investigatorship (CSI) Awards for Singaporean clinician-researchers. Over the past three years, 20 such awards have been made. These awards are currently being revamped and we can expect the new Clinician Scientist Award scheme to be even more attractive going forward.

It is important to understand why we have to bring in the top scientists. The nurturing and development of young scientific talent is not just about giving them the opportunities to pursue their education at top institutions overseas. The top scientists are crucial to provide the guidance and mentorship that our young scientists need when they truly start their research career as post-docs. Of course, the presence of top scientists also goes a long way to position Singapore as the most significant and attractive BMS research hub in Asia. This increases our visibility in the global BMS research landscape and brings us valuable opportunities for collaborations, business development and investments.

◀ Page 5 – Interview with Mr Lim Chuan Poh

**SMA News:** How are we going to get the younger generation excited about Science R&D as a long term career track? Many of our academically successful and intelligent young Singaporeans, understandably, are attracted to much better paying private sector jobs and prospects of faster returns on investments.

**Mr Lim:** The key is to help our students discover and develop their passion for Science and discovery from an early age. A\*STAR has a dedicated Youth Science Programme, in which we work closely with MOE and the Singapore Science Centre to engage students through a variety of science competitions, talks, workshops, open houses and student attachments. These activities reach out to students from primary school to Junior College (JC).

Every year, over 100 JC1 students come for four to five weeks of research attachment at our RIs, where they work on a research project under the guidance of a scientist. Since last year, our A\*STAR scientists have also been mentoring JC students for research projects that they offer as a H3 subject under the 'A' Level syllabus. Here, students are given challenging problems that will deepen and enrich their knowledge of science and its applications. These projects give students first-hand exposure to research. It also allows them to see for themselves that R&D is a major priority in Singapore, that there is a very meaningful and impactful career in scientific research, and they can be a part of it.

We are currently exploring some additional initiatives such as a science camp for Secondary Three students, and perhaps even having dedicated facilities for student outreach (for example, specially-equipped labs for teaching) by working closely with MOE and the Singapore Science Centre.

At the end of the day, A\*STAR's outreach efforts do not just enthuse students about Science, they also seek to inspire a group of students who are keen to take up the National Science Scholarship (NSS) and A\*STAR Graduate Scholarship (AGS). Through these scholarships, we select the most capable and committed Singaporeans and offer them the best educational and developmental opportunities in the world. The aim is to give them the best preparation to become scientists or scientific leaders of the highest caliber.

**SMA News:** Can you share with us what books you are currently reading? What do you do to unwind and de-stress?

**Mr Lim:** I am currently reading a number of introductory texts on BMS and scientific journals across a range of disciplines to better acquaint myself with the research work undertaken in A\*STAR. For routine de-stressing, I find jogging and sustained aerobic exercise to be very helpful and energising. Once a year, I like to take some time out to visit different places to learn about different people and their cultures.

**SMA News:** You were previously Chief of Defence Force and later Permanent Secretary, Ministry of Education. What do you feel are the differences and similarities between leading A\*STAR, and leading the SAF and Education Ministry? In your development as a leader, who as a role model locally or internationally have made the biggest impression on you?

**Mr Lim:** Leadership at the most fundamental level is about inspiring others around you to work towards a meaningful objective. It is common to organisations of all shapes and sizes.

But there are clear differences between leading the SAF, the Education Ministry and A\*STAR. Their missions are distinctly different. The SAF is about securing Singapore's future; Education is about preparing Singapore for the future; and A\*STAR is about creating a future for Singapore. Therefore, the types of people, their capabilities and skills-set, and how they are organised to achieve the respective missions are different. In the process, the culture that has grown out of each of these organisations is also unique and distinctive.

I have been fortunate to be given many opportunities for development throughout my service with the SAF, the Ministry of Education and now at A\*STAR. In particular, the interactions I have had over the years with so many different individuals – in the public and private sectors, in uniformed and non-uniformed services, from the superiors to the soldiers, from the top scientists to the students – have provided me with many impactful moments of learning and self-discovery. I believe that each of us is the synthesis of our accumulated life experiences. ■