

Duke-NUS' proud legacy, bright future



Ranga Krishnan

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It feels like it was just yesterday that I came to Singapore to join the exciting adventure to build a new and innovative medical school.

It has been a wonderful journey. The Duke-NUS Graduate Medical School was born out of a strategic vision to build a biomedical sciences hub for Singapore.

A medical education review panel led by Lord Oxburgh of England had determined that a graduate medical school training physician-scientists was an essential ingredient to build a workforce that would be needed for Singapore's biomedical economy and healthcare needs.

Duke University in the United States and the Government of Singapore signed an agreement in 2005 to do this.

Initially, there was considerable apprehension as to whether the new school would succeed.

Many other academic partnerships between US universities and their Asian counterparts had struggled.

Obviously, the risks were high.

When I first came in 2006 and met many individuals here in Singapore, there was a genuine interest from all concerned in making the venture a success.

The goals were clear and there was tremendous willingness to help by all stakeholders – the Agency for Science, Technology and Research (A*Star), SingHealth, the Ministries of Trade and Industry, Health and Education, the National University of Singapore and, of course, Duke.

I felt that the chance to do something that would be meaningful and successful was high and made the move to Singapore.

Time has flown by and we have come a long way in building Duke-NUS to what it is today – a shining beacon of biomedical sciences research and medical education.

When you get a chance to do something from scratch with no legacy, one can take the opportunity to build something better. At Duke-NUS, our education deans and faculty used this to build and implement a model of learning based on best practices and science. Singapore and Duke faculty joined together and deconstructed the curriculum from Duke, adapted it for Singapore and then implemented the initial phase of it using team learning.

The system they built,



Students from Duke-NUS Graduate Medical School attending their graduation ceremony in May. The TeamLEAD learning system developed at the school has gained widespread recognition. ST PHOTO: KUA CHEE SIONG

“TeamLEAD” (LEAD stands for Learn, Engage, Apply and Develop), is an efficient active learning method that takes advantage of technology and uses it to promote active, engaged and effective learning.

Here, lectures, readings and the review of supplemental material are done before class.

In-class activity focuses on assuring understanding, applying principles, and solving problems within student teams facilitated by faculty. Courses are run by teams of doctors and scientists who are supported by education faculty with expertise in the science of learning. The classroom discussions are driven by student enquiry instead of faculty answers.

When TeamLEAD was first introduced, again there was enormous scepticism.

Views included: “It will not work”, “Students will not speak up” and “We cannot teach everything this way”.

But time has proven this wrong.

Students speak up, participate and learn. In fact, TeamLEAD has been so successful that more than

180 delegations have come by to see it, Duke in North Carolina has implemented it and the Association of American Medical Colleges has published a report on the approach.

But what has been particularly gratifying is to see local schools and teachers such as Christopher Chee from a local secondary school adapt this approach for mathematics and other subjects.

The success has been beyond any of our expectations.

One of our other mandates was to build a research infrastructure and an academic medical centre with healthcare group SingHealth to improve health and provide economic benefit to Singapore.

Our partnership has done that and more in a very short time. This happened because of the commitment of the leadership, doctors, nurses and staff at SingHealth.

Our research is beginning to bear fruit, with multiple new treatments being developed for dengue, cancer and neurological conditions such as attention deficit disorder.

This includes a device for attention disorder developed in

A leader in geriatric psychiatry

Professor Ranga Krishnan, 59, was dean of the Duke-NUS Graduate Medical School Singapore from July 2008 till the end of last month. He has been chairman of Singapore's National Medical Research Council since 2013, and is professor of psychiatry and behavioural science at Duke University in the United States.

A neuroscientist and psychiatrist, he is an international expert in treating depression and other brain disorders in the elderly. In the 1990s, he was credited with identifying the characteristics of a then little-known condition called vascular depression, in which small strokes in the brain's mood centres give rise to a unique type of depression.

He created a translational research centre for depression in the elderly in the United States,

the only such centre funded by the US National Institutes of Health. Prof Krishnan is an elected member of the Institute of Medicine, a resource for independent, scientifically informed analysis and recommendations on human health issues.

In recognition of his contributions to biomedical science, Prof Krishnan received the 2007 Distinguished Scientist Award from the American Association for Geriatric Psychiatry.

He was also the 2008 recipient of the C. Charles Burlingame Award, which recognised his outstanding leadership and lifetime achievement in psychiatric research and education.

In 2010, Dr Krishnan received the Award for Research in Geriatric Psychiatry by The American College of Psychiatrists.

close collaboration with A*Star.

And this month, one of the targets identified by our faculty has led to a drug developed in collaboration with A*Star which has begun testing in humans.

I do not know of any other place or people that could have done this, in the short time that this school has taken.

What led to the success?

First, people. There are many, and these included over a thousand individuals – faculty and staff, and, particularly, the students. They are who we are and why we are here, in the first place.

Second, clear goals and objectives spelt out by all parties from the beginning. This meant that strategies could be developed, implemented and measured.

Third, commitment by all stakeholders to work together to achieve success, and a passion to make it happen.

Fourth, that both stakeholders – Duke and Singapore – should benefit. Indeed this has happened; Duke clearly reaped benefits that were not expected, especially the successful TeamLEAD approach

that has now gone back to Duke.

With Duke-NUS firmly established, it is now time for me to move on to my next phase in life.

The new dean is Professor Thomas Coffman, an accomplished leader and clinician-scientist, who has won international accolades for his work and leadership in cardiovascular medicine and kidney disease.

In the last several years, Singapore has made its presence felt on the international medical research scene and is now reaping the benefits of its early investments in both the quality of the research undertaken locally, and the many new young Singaporeans who are building careers in research and making significant progress to improve health and bring about economic benefits.

This is only the beginning, and I foresee a great future for biomedical science efforts in Singapore.

I leave with pride and joy in having been lucky enough to work with Singapore and my colleagues at Duke and Duke-NUS, and to be a part of this terrific enterprise.