800 more PhD spots at NTU in next 5 years

Half of places will be for S’poreans, in bid to grow local researcher numbers

By Jane Ng

NANYANG Technological University (NTU) will have 800 more places for PhD students in the next five years, as it ramps up its research in areas such as sustainable energy, health care and new media.

And half of these places will be for Singaporeans, in a bid to increase the number of local researchers.

NTU now has 2,700 PhD students, with Singaporeans making up 20 per cent of this figure. The aim is for 40 per cent of doctorate students to be Singaporeans.

About one-third of the National University of Singapore’s 4,200 PhD students are Singaporeans or permanent residents.

To build up its strengths in research, NTU will spend up to $100 million over the next five years, said the university’s incoming president, Professor Bertil Andersson, yesterday.

At a press conference to outline its future focus, current president Su Guaning said NTU aims to make its mark globally in research areas such as sustainability, health care, new media and entrepreneurship. It will also seek to engage with countries such as India and Vietnam.

One way to attract more PhD students would be to introduce them to research at the undergraduate level.

“If they have experience doing research at the undergraduate level, they’re much more likely to take up a PhD programme because they know what it’s about, the rewards and the wonderful energy that comes with that,” said Dr Su.

Another way is to look at what practical matters could be holding potential PhD students back. NTU’s School of Materials Science and Engineering has been able to attract more Singaporean PhD students than other departments: It has 270 PhD students, more than half of them local.

It has attracted Singaporean PhD students by employing them as staff members so they receive a CPF contribution, as opposed to offering them a research scholarship. Professor Freddy Boey, who heads the school, said: “We hire them as staff though in reality, 85 per cent of the work is for their PhD. You have to be flexible.”

With the university’s future areas of focus, Dr Su hopes that even more Singaporeans will take up research.

One of the five focus areas is earth sustainability, for which NTU has received $830 million in research funding from the National Research Foundation and other donors. An example of a research project in this area involves researchers trying to mimic nature by creating artificial leaves, with the aim of building artificial systems to generate clean fuels like hydrogen.

In the area of integrated health care research, NTU has been involved in designing biodegradable stents for use in surgery. Prof Boey, who invented the biodegradable stent, said he came up with it after a conversation with a doctor friend.

While stents are used to unblock heart vessels, they are not needed after a year and become a liability if they remain in the body, as there is a danger of blood clots forming near the stent. So, as part of an interdisciplinary research project that merges engineering and medicine, he came up with a stent which lasts for only a year.

“This medical problem is really an engineering one. Doctors know what needs to be done but don’t have the know-how to do it. This is where we come in,” he said.

A third area of research is new media innovations, tapping on NTU’s schools of art, design and media. Professor Nadia Thalmann is heading a project which simulates human behaviour digitally. It looks at how such simulation can be applied in situations like performing virtual surgery or predicting crowd behaviour in a disaster.

Another area of focus for NTU is the commercialisation of its research for practical use. Said Prof Andersson: “The research should not be academically snobbish. Research that is done should be useful and relevant for Singapore.”

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