Eureka, URECA!
Lynette Koh talks to two students about honing their research capabilities at NTU

Edbert Jarvis Sie: The chance to grow
Edbert Jarvis Sie was surprised to receive a message from his Swedish professor not long after he returned from a student exchange programme at the Royal Institute of Technology in Sweden. The 22-year-old Indonesian ASEAN Scholar and International Physics Olympiad medallist said: “He wanted to offer me a scholarship to study for a PhD.”

“I told him I could not take up his offer immediately as I was only in the third year of my degree programme, and I had promised to fulfil my scholarship obligations after graduation. But he said he would wait!”

This is not the first time Edbert has received such recognition for his abilities. Recently, the graduating physics student at the School of Physical and Mathematical Sciences (SPMS) began conducting tutorials on electromagnetism for first-year students. “My professors put a lot of trust in me,” he explained.

As a participant of NTU’s Undergraduate Research Experience on Campus (URECA) programme, which is offered to top students, Edbert is also given access to the university’s state-of-the-art research facilities. His project on spintronics — a technology which studies the behaviour of an electron’s spin and the applications that can be derived from this — led to his current URECA research on laser physics.

Currently, Edbert can spend up to 12 hours in the laboratory every day. But when time permits, he enjoys engaging in philosophical, theological and scientific discussions with his friends.

Last year, he also had the opportunity to indulge his passion for design. He was the publication officer for the SPMS Club and was responsible for designing the club’s website, posters and T-shirts.

These opportunities have all proven invaluable to Edbert. “The education I have received at NTU has given me a strong grasp of the fundamentals and attitudes of research. My experiences here have also allowed me to discover myself as a person,” he said.

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— Edbert Jarvis Sie, College of Science, majoring in physics

Khoo Chee Ying: It is all about experience
The course of research does not always run smooth for third-year School of Materials Science and Engineering student Khoo Chee Ying.

The 22-year-old is a participant of NTU’s Undergraduate Research Experience on Campus (URECA) programme. She said: “Things can be very unpredictable when you are doing research. Sometimes after you solve one problem, another one comes up!”

But Chee Ying stressed that she would not have it any other way. Prior to taking part in URECA, Chee Ying had her first taste of doing research in her second year, when she was selected for the Undergraduate Opportunities Research Programme. The year-long programme not only piqued her interest in research, it also prepared her for her current project on improving transistors for electronic applications.

Chee Ying, who recently did an industrial attachment at Exxon-Mobil, said: “Research is all about experience, and the more you do it, the more you improve your analytical and problem-solving skills.”

Besides sharpening her research skills, Chee Ying has also had the opportunity to hone her talent in sports at NTU.

Most recently, the table tennis enthusiast, who has been playing the sport since she was 10, represented Singapore at the Asian University Games held in Vietnam. The team, comprising Chee Ying and three other tertiary students, bagged a bronze medal.

Said Chee Ying with a smile: “It was an honour to represent the university, as well as Singapore!”

In addition to a schedule filled with sports and schoolwork, the all-rounder managed to fit in a work and travel trip to Florida last year.

Going sightseeing between work stints at the Discovery Cove between May and August gave her the opportunity to thoroughly experience a foreign culture.

Said Chee Ying: “When you are young, you should just try out different things.”

And NTU, she said, has given her ample opportunities to do just that. She concluded: “It is truly a world-class university.”

— Khoo Chee Ying, College of Engineering, majoring in materials engineering

NTU facts
With its growing research profile, NTU has established itself as an internationally-recognised institution for research in fields such as advanced materials, biomedical engineering, clean energy and the environment, computational biology, intelligent systems, nanotechnology, and wireless and broadband communication.

The university is ranked among the world’s top 25 technology universities*.

EXCELLENCE IN RESEARCH
Students who have a passion for research can further their interest with NTU’s Undergraduate Research Experience on Campus (URECA) programme.

This programme gives academically-inclined students access to research facilities all over campus.

Besides earning academic credits, URECA students can receive up to $400 a month for spending an average of 10 hours a week on an eight-month-long research project.

There are more than 800 research projects, in a variety of fields, available to students. These range from engineering and biological sciences to business management and accountancy, communication studies and humanities.

In addition to fostering a research culture, NTU also works with its industry partners to create innovations in engineering, life and physical sciences, media, business, and education, to improve life, health, the environment and society.

NTU nine-storey Research TechnoPlaza is a hotbed of innovation. It is the venue for strategic interdisciplinary research in areas such as biomedical and pharmaceutical engineering, nanoscience and nanotechnology, intelligent devices and systems, advanced computing and media, infocomm, and environmental and water technology.

* The Times Higher Education Supplement 2007

My URECA project was on the evolving significance of mixed media in contemporary drama.

The project enabled me to discover the challenges and rewards of research. I enjoyed the whole process immensely.

— Fernandez Stephen Fredrick, College of Humanities, Arts, & Social Sciences, majoring in English Literature