

NEWS RELEASE

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Study by NTU researchers sheds light on challenges faced by Singapore women in STEM

- NTU moves forward to address issues for women in STEM through new endowment, programmes

Gender diversity may have improved in the workplace, but many women in the fields of Science, Technology, Engineering and Math (STEM) in Singapore are more likely than men to perceive there are barriers to the entry and progression in STEM careers due to gender, a study by the Promotion of Women in Engineering, Research, and Science (POWERS) programme has found.

The findings by the POWERS programme from **Nanyang Technological University, Singapore (NTU Singapore)**, were from a study conducted between late 2020 and early 2021 and serve to inform the development of new approaches for the university and society to build a supportive ecosystem for women in STEM.

A nationally representative sample of 738 Singapore residents were surveyed by the POWERS team to understand the gender gap in STEM careers in Singapore. It was found that about half of women in the industry believe it is harder to get a job and progress in their career due to their gender.

The study highlighted that woman left the STEM career path because they did not feel they belonged. The perception was the highest for women who entered STEM careers from non-STEM diploma/degree courses and those who left STEM.

The researchers also found that women in Singapore are equally likely as men to prefer career activities which are often related with STEM such as activities that are orderly and systematic, observational, and investigational in the social or economic domains.

Associate Professor Sierin Lim, Co-Chair of Women@NTU and POWERS, said the findings, which were reported in a whitepaper titled “Closing the STEM gender gap in Singapore”, underscored the need for a more supportive environment for promoting gender diversity in STEM.

“The complex problems facing the world today requires diversity in perspective and approaches, yet women continue to be underrepresented in the Science, Technology, Engineering and Math fields. We hope our Singapore study can offer deeper insights on gendered interests and careers in STEM and may help inform the planning and partnerships by NTU, industry, and the Singapore government in building a supportive STEM ecosystem. This is one of the drivers for the launch POWERS initiative a year ago,” Assoc Prof Lim said.

Supported by Singapore's Ministry of Education and NTU's College of Engineering, College of Science, Graduate College and Women@NTU, POWERS is a voluntary initiative co-founded by Assoc Prof Lim, Associate Dean (Global Partnerships), Graduate College and Professor Kimberly Kline, a former Associate Dean (Faculty), College of Science.

The programme, which is funded by the Ministry of Education, aims to recruit, and empower women with a long-term goal to increase gender diversity in STEM careers.

Taking the lead to close the gender gap with POWERS programmes

When it comes to preference for career activities, the NTU study found that Singaporean women are equally as likely as men to prefer realistic (e.g., explicit, ordered, or systematic) and investigative (e.g., observational, systematic, and creative investigation) career activities which are often STEM related. This finding is distinct from what have been reported in Western culture.

Yet, women in Singapore are less confident in their math and science abilities compared to men. Women generally do not believe that they belong in STEM and the belief increases as they move up the ladder. These findings are consistent with past international research that suggest men are more likely than women to justify the gender gap in STEM by blaming women's lack of interest in STEM rather than recognising systemic biases.

To close the gender gap in STEM, the whitepaper suggests stakeholders to promote a culture of inclusivity for women in STEM, change gender-based stereotypes, and dismantle barriers of participation in the STEM workforce.

New \$1 million endowment to advance women in STEM

NTU Singapore, through POWERS, is taking the lead to provide educational support and skill building opportunities that empower women to pursue their passion and

career advancements in STEM. This is in line with the recommendations put forth in the whitepaper and by UNESCO.

Supported by a new S\$1 million **Tan Seow Chiap Endowment for Promotion of Women in Engineering, Research and Science**, NTU will be offering a series of initiatives to achieve the aims of POWERS.

The gift was made in the personal capacity of **Dr Tan See Leng, Minister for Manpower and Second Minister for Trade and Industry**, who named the endowment in honour of his late father, Mr Tan Seow Chiap.

The gift was announced today at the POWERS 1st anniversary event, where Dr Tan attended as Guest-of-Honour and participated in a panel discussion on the issues reported in the whitepaper by POWERS. Panellists consisting of representatives from NTU and its National Institute of Education (NIE), tech giants HP Inc and Dell, as well ExxonMobil Asia Pacific, called on all parties – education, corporate and government agencies - to take action to create a supportive ecosystem woman in STEM.

The new endowment will support **scholarships** worth up to \$50,000 annually. The scholarship will benefit women in their pursuit of a STEM degree at the NTU College of Engineering and College of Science.

The fund will also be used for **mentoring programmes** by leading female engineers, researchers, and scientists for female undergraduates in the related fields every year, to improve women's retention through personal development activities to prepare for STEM careers. This follows the inaugural academic mentoring programme launched last year, which has been well-received.

An **incubation programme** which awards a grant of S\$1,000 to deserving early-stage ideas, initiatives and research led by female student innovators will also be launched. Furthermore, there are plans to organise **educational workshops and activities** in professional and personal development that will be made available to all undergraduate students, regardless of their gender.

On the endowment gift, Dr Tan said, "Gender diversity in all sectors is crucial to the social fabric and economic health of Singapore. I hope the initiatives offered by NTU through its POWERS programme can lower the barrier of entry for female students and give them the confidence to grow and advance in the Science, Technology, Engineering and Math fields in Singapore."

As a token of appreciation for the gift, **Professor Ling San, NTU Deputy President and Provost**, witnessed by **Professor Subra Suresh, NTU President** and **Ms Lien Siaou-Sze, Vice President, University Advancement**, presented Dr Tan with a plaque and a bouquet of flowers.

POWERS HP Singapore mentorship programme pilot

At the event, the first POWERS mentorship programme developed in collaboration with an industry partner, HP Singapore, was also announced.

To begin in May, the **POWERS HP mentorship pilot** will benefit NTU female students from the College of Engineering and the College of Science.

Aimed at giving students insights into how technology evolves from R&D into commercially ready products, selected students will be paired with experienced women professionals in technical job functions at HP Singapore for three months.

The programme will include job-shadowing, regular one-on-one mentoring conversations, networking, and workshops to develop foundational professional skills including Management Communications, Understanding Basic Finance, and Effective Project Management.

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Note to Editor:

The whitepaper titled "[Closing the STEM gender gap in Singapore](#)", published 4 March, 2022

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Media contact:

Ms Junn Loh
Manager, Media Relations
Corporate Communications Office
Nanyang Technological University, Singapore
Email: junn@ntu.edu.sg

About Nanyang Technological University, Singapore

A research-intensive public university, Nanyang Technological University, Singapore (NTU Singapore) has 33,000 undergraduate and postgraduate students in the Engineering, Business, Science, Humanities, Arts, & Social Sciences, and Graduate colleges. It also has a medical school, the Lee Kong Chian School of Medicine, set up jointly with Imperial College London.

NTU is also home to world-class autonomous institutes – the National Institute of Education, S Rajaratnam School of International Studies, Earth Observatory of Singapore, and Singapore Centre for Environmental Life Sciences Engineering – and various leading research centres such as the Nanyang Environment & Water Research Institute (NEWRI) and Energy Research Institute @ NTU (ERI@N).

Ranked amongst the world's top universities by QS, NTU has also been named the world's top young university since 2014. The University's main campus is frequently listed among the Top 15 most beautiful university campuses in the world, and it has 57 Green Mark-certified (equivalent to LEED-certified) building projects, of which 95% are certified Green Mark Platinum. Apart from its main campus, NTU also has a campus in Singapore's healthcare district.

Under the NTU Smart Campus vision, the University harnesses the power of digital technology and tech-enabled solutions to support better learning and living experiences, the discovery of new knowledge, and the sustainability of resources.

For more information, visit www.ntu.edu.sg