

**GOH Keynote speech by Permanent Secretary of National Research and
Development, Professor Tan Chorh Chuan at the
International Women in STEM & Medicine Symposium (IWSMS) 2025
on 24 March 2025**

Distinguished guests, colleagues and friends,

Ladies and gentlemen

1. A few years ago, I had the pleasure of sitting next to Professor Ada Yonath at dinner. I greatly enjoyed the experience, as she shared her scientific journey which is truly remarkable and inspiring. Professor Yonath had set out to establish the 3D structure of the ribosome, which at that time was deemed an unachievable goal. Her work was met with great scepticism for many years. She was fired twice as she did not have enough research results to show.
2. Despite all these setbacks, she eventually succeeded and received the Nobel Prize for Chemistry in 2009. Science as she puts it is like climbing Mount Everest and in this regard, Professor Yonath has blazed a trail as a top scientific mountaineer.
3. As part of her trail blazing work, she has also been a powerful and effective advocate for the role of women in science. I came across an interview which she gave in 2018. One of the first questions was this: "Has being a woman made your path more difficult?" I think you will like her answer: "I was never a man, so I cannot compare. At the same time, I can say that throughout my scientific career, I have never felt any gender discrimination." The interviewer then asked: "So far, only four women have received Nobel prizes in chemistry. Why do you think this is the case?"
4. Professor Yonath's answer was instructive. She said: "There are fewer women in science because society doesn't encourage women to become scientists. Sentences

like: “Don’t try to be clever, you’ll never find a husband”, or “Don’t choose a demanding career, you won’t have a good family life”, are frequently repeated.

5. At universities, in science, it starts out equal, with fifty per cent male and female students. But this changes later. Some girls may be better students, but they often go to work in somebody else’s lab – either because they want less pressure at work, and are therefore less motivated to become principal investigators, or because they prefer to allocate more time to their families.” Beyond changing women’s attitudes, Prof Yonath argues that society has to change its opinions and that education is the way.
6. I have taken some time to share these insights from Professor Yonath because they are relevant to our situation in Singapore. In Singapore, 41% of our tech professionals are women. Taking Duke-NUS as an example, for the 2024 intake, 59% of medical students and 67% of the PhD students are female. But as in many parts of the world, many women do not stay in STEM fields over the long term. Hence despite their strong presence at entry and mid-career levels, women remain significantly underrepresented in senior leadership roles.
7. To address this, as Professor Yonath has indicated, we need to work both at the ecosystem- and societal-level, as well as at the level of individuals. **A good place to start is at the workplace – how we create workplace environments that are conducive for research and STEM work, and also provide active and appropriate support for women in these roles.**
8. In Singapore, flexible work arrangements and parental leave policies have been strengthened, recognising that career progression should not come at the expense of family responsibilities. These policies benefit all employees but have particularly positive impacts on the careers of women. Many organisations have proactively built further upon these. For example, our Institutions of Higher Learning have a range of policies to support women faculty. NUS for instance provides tenure clock extensions and teaching relief after maternity leave.

9. Policies that accommodate caregiving responsibilities are also very important as women often bear disproportionate household and childcare responsibilities. Providing childcare facilities close to campus and having adequate lactation rooms and support are examples of ways in which such support could be expanded. Having clear and supportive policies is very important, but we know that issues and challenges may come up which are specific to particular settings or roles. It is therefore useful to have broader institutional platforms which can identify and help address these. At A*STAR, for example, the Diversity Workgroup was set up in 2021 to promote a more gender-inclusive organization. Among other things, it enables targeted communications and discussions that champion workplace diversity, while maintaining confidential channels for reporting potential discrimination.
10. **Another important area of focus is to continually increase the quality and objectivity of our processes for appointing and advancing STEM staff, and evaluation for grants.** Our research funding agencies have refined their grant evaluation processes to underscore the importance of assessing research proposals primarily on scientific merit rather than perceptions of the investigator. This includes mitigating the possibility of unconscious bias. It is also important that selection, appointment and evaluation committees have female expert representation to ensure a greater diversity of inputs and balance of perspectives. Training is important in this regard. In A*STAR for example, training for A*STAR leaders alongside transparent HR and grant-funding policies serve to better foster equal opportunities and cultivate an inclusive leadership culture.
11. **These institutional and ecosystem-level initiatives need to be strongly complemented by effective mentorship and leadership development programmes.** Mentorship and leadership development are crucial to help those in STEM fields, whether women or men, to grow as professional and research leaders and realise their potential. However, women have distinctive needs and challenges which have to be recognized and actively supported in such programmes, especially as they ascend to more senior positions. Female role models are critical in this regard. Strategic mentorship programmes that pair emerging women leaders with established

leaders, provide pathways for professional growth and advancement. It is also important to provide opportunities for women to lead and to actively consider women candidates when leadership opportunities open up. An example of such an effort in action, is at A* STAR. With the active support of women in leadership roles, women now helm one-third of its Research Institutes as Executive Directors. A*STAR also continues to build on the visibility of women leaders in STEM, for instance by ensuring diverse representation at scientific conferences, seminars, and talks.

12. The theme of this symposium is "Accelerate Action". This is timely – even as we continue to educate and raise awareness about the challenges faced by women in STEM fields, we need to also translate intention more actively into ACTION.

13. It is clear that our STEM ecosystem, and society more generally, can benefit greatly from the large and growing contribution of women in STEM fields. There is also evidence that suggests that gender diversity in scientific teams can be beneficial for science and innovation, outperforming homogeneous groups in problem-solving and decision-making. The participation of women increases the diversity of perspectives, and can improve group processes such as communications and collaboration.

14. **So what more can and should we do?** I believe that we should work even more closely together taking a systematic "whole-of-ecosystem" perspective, that encompasses three key elements.

15. **First, we should adopt evidence-based approaches.** Our strategies must be grounded in robust data and research to increase our situational awareness and to discern what actually works in practice. It is also important to share data and initiatives more broadly across institutions and programmes in Singapore, so that good practices can be adopted widely. In this regard, meetings and platforms such as this symposium play an essential role.

16. **Second, progress requires the active engagement of men as champions for change.** We should recognize that we are not working on a "women's issue" – instead, promoting and enlarging the role of women will advance excellence and innovation in STEMM fields.
17. **Third, we need a systemic focus.** Individual development programs are useful and important. But at the same time, we must address systemic barriers embedded in our institutions and processes. This includes examining how we hire new staff, evaluate merit, allocate resources, and structure career advancement.
18. **Each of us regardless of position or career stage can be leaders contributing to accelerating progress.** For institutional leaders: Are your policies and practices capturing and developing all available talent, especially women? Are promotion pathways accessible to all qualified candidates? Does your organisational culture actively support diversity? What are some of the biases at play? Is your organization recognizing and celebrating the achievements and contributions of female colleagues?
19. For educators and mentors: how you can inspire and support the next generation of women in STEMM. Your influence extends far beyond technical knowledge—your example and encouragement may determine whether a young woman persists and succeeds in her scientific journey.
20. For researchers and practitioners: Consider how you can incorporate diverse team members and perspectives in your work. The quality and relevance of scientific output improve with more diverse teams.
21. For our students and early career professionals: Your voice matters. Actively seek supportive mentors, actively engage in your institution's work and suggest ways in which policies and practices can be refined and improved.
22. If we can work purposefully and collaboratively, we can further raise awareness while translating ideas into tangible changes in our laboratories, classrooms, clinics, and board rooms. By accelerating progress in diversity and inclusion, we not only create

more diverse and exciting workplaces but enhance the quality and impact of scientific and medical contributions to society.

23. In closing, as Singapore continues to position itself as a hub for research excellence and healthcare innovation, our success will increasingly depend on our ability to access the full spectrum of talent available to us. Our women researchers, leaders and colleagues are an indispensable part of this journey towards excellence and high impact.

24. Finally, I wish you all a very productive symposium - one that sparks ideas, facilitates exchange of approaches and practices, fosters new connections, and most importantly, inspires action.

25. Thank you.

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