UNCOVERING HIDDEN POTENTIAL

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DR. WAN YUE

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For Dr. Wan Yue, science has always been a series of stepping stones.

The Ribonucleic Acid (RNA) biologist at the Genome Institute of Singapore (GIS) speaks fondly of a childhood surrounded by her parents and mentors who continuously encouraged her curiosity and interest in the workings of the biological world.

Yue immediately took up the opportunity of the A*STAR National Science Scholarship when it came along. Her reasoning was straightforward: "We have not seen or known enough of the world, to be able to plan or know what will actually benefit you in the long run. The only way is to try your best, embracing any opportunities that come by."

As an A*STAR scholar, Yue pursued further studies overseas, eventually graduating with a PhD in Cancer Biology from Stanford University. It was during her PhD studies that she was introduced to the world of scientific research.

Yue's current work at GIS lies in studying how organisms utilise RNA for their function. RNA structures are responsible for regulating cellular gene expression. It has also been said to cause certain diseases through mutation. To better probe these RNA structures, Yue developed a breakthrough method that increases the process of obtaining the structures by several thousandfold. This massive increase in efficiency relating to a seemingly small nucleic acid has led a wave of change, pioneering the field of RNA "structuromics".

ONE MILESTONE AFTER ANOTHER

For her work in RNA sequencing, Yue has been recognised in MIT Technology Review's 2016 "Innovators Under 35" Asia list.

Yue's interest in RNA has not stopped here. With her breakthrough innovation, she has been able to target a relevant research area in the world today: uncovering the link between RNA and antimicrobial resistance (AMR).

"More bacterial pathogens are becoming increasingly resistant to the available therapies," she says, explaining the phenomenon of AMR. "In the future, we could die from infections that were previously easily treatable." By targeting RNA instead of the more commonly studied proteins, her research is expected to shine new light on drug therapies to combat AMR.

Yue's research in linking RNA to AMR carries so much clout that she has been awarded the *Society in Science – The Branco Weiss Fellowship*, a prestigious fellowship that allows postdoctoral researchers to pursue a project of their choice with significant relevance in today's world. She is the first Singaporean to win the fellowship, garnering international acclaim in the field. Her work may serve as a cornerstone to defeating AMR, with potential collaborations with pharmaceutical companies utilising her research to develop more effective drugs to benefit all.

For all her success, Yue is quick to credit others, especially A*STAR for providing her the opportunity to study overseas. Her stint abroad put her in the company of noted international scientists, who are immensely passionate about bettering the world through science: a trait that has rubbed off on her. "The people I've met are very excited about research; it's not just a job for them, but their passion and their life," she says.

PASSING ON THE BATON OF SCIENCE

Describing herself simply as "honest and dedicated", Yue is of the mindset that science should be easily accessible, no matter how narrow the specialisation. "Information is power," she says. "I think scientists have a social responsibility to be able to deliver information to the community in a clear, honest and simple manner, so that everyone in society can understand the implications of scientific research going on."

Besides research work, Yue also mentors interns at her lab. "There are times when students will tell me, 'This is the best internship I've ever done!' and that makes me feel a bit more accomplished," she says. Yue hopes to pass on to them the importance of doing their best, and providing them the same opportunities she has had.

Yue also believes more can be done to attract talent to the scientific field. To her, passion comes easily; but she remains frank about how the nature of a scientific career keeps some away. Science, to her, has always been a journey of trying and failing before hitting on something groundbreaking. "There is a general culture in Asia where people are scared to fail," she observes. "Most people care about that more than what they are actually interested in (with regard to science). I feel that this is a shame as we are actually wasting talent."

Another issue Yue speaks openly about is creating opportunities for women in science, particularly in areas like conferences and management. "If women want to succeed and they don't want to put in as much time or effort in the family, they are not viewed as favourably (compared to men)." She believes a balance needs to be struck, with more family-friendly policies introduced to give female scientists the recognition they deserve.

What's next for Yue? As she sees it: "Science is a rollercoaster; it is a combination of time, energy and effort taken one step at a time".