

MEDIA RELEASE FOR IMMEDIATE RELEASE

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A*STAR SCIENTIST IS FIRST SINGAPOREAN TO RECEIVE INTERNATIONAL RECOGNITION FROM ‘SOCIETY IN SCIENCE’ ORGANISATION

Singapore – A*STAR’s Genome Institute of Singapore (GIS) fellow, Dr Wan Yue, has become the first Singaporean to receive the prestigious Branco Weiss Fellowship given by the Swiss-based ‘Society in Science’ philanthropic organisation.

Every year, the organisation gives out 10 fellowships to outstanding scientists. These come with a grant to further each scientist’s research. In recognition of Dr Wan’s work, ‘Society in Science’ has awarded S\$700,000 towards her research to tackle the global health issue of Antimicrobial Resistance (AMR).

Threat of AMR to Human Health

According to a 2014 World Health Organization report, AMR threatens the effective prevention and treatment of an increasing range of infections caused by bacteria, parasites, viruses and fungi¹. This is because common bacteria are becoming resistant to treatments in many parts of the world. WHO says that there is an urgent need to develop new ways to deal with the rise in AMR.

A key step to tackling AMR is to find out how pathogenic microorganisms attain their ability to resist the effects of antimicrobial drugs. Dr Wan aims to shed light on microbial drug resistance by studying the genes or RNA of microbes. It is hoped that her research will uncover critical genetic junctures in microbes that will come in useful in the search for new antimicrobial treatments.

In Search of New Microbial Treatments

Dr Wan was one of the first scientists to develop a high throughput approach to study RNA shapes in microorganisms. An aspect of the study is to look at how pathogenic microorganisms sense and respond to their environment for survival and pathogenesis, such as *Listeria monocytogenes* bacteria that utilises an RNA switch that encodes virulent proteins that harm the body. At room temperature, the bacteria’s RNA is inactive, but when exposed to higher temperatures, like in the

¹ Antimicrobial resistance: global report on surveillance 2014; World Health Organization

body, the RNA switch is “turned on” and activates the bacteria’s production of virulent proteins. Many such RNA switches remain to be discovered in clinically important pathogens. By understanding the biological pathway that switches microbial RNA on and off, Dr Wan plans to identify elements within the pathway that can be targeted by future drugs.

"I am extremely honoured to receive the Branco Weiss Fellowship for Society in Science," said Dr Wan. "The ultimate goal of scientific discoveries is to advance human society. I am excited that my technology can contribute innovative solutions to existing problems, such as anti-microbial resistance, in our society. I hope that this investment in science will help shape our future."

Prof Ng Huck Hui, Executive Director of GIS, said, "GIS is exceedingly proud of Dr Wan’s achievements. It means a lot that our young scientists such as Dr Wan are able to compete internationally for an award that is given to high-potential researchers, with a passion to advance the society through blazing new trails in impactful research. Dr Wan’s research in identifying unknown RNA switches in pathogens has the potential to transform the way to fight pathogens in human diseases."

"For decades, antibiotics have been one of the pillars that allowed us to live longer and healthier. But the emergence of antimicrobial resistance threatens to pull us back from medical advances humans have made," said Dr Benjamin Seet, Executive Director of the Biomedical Research Council, A*STAR. "Dr Wan Yue is a good example of the brilliant talents that are contributing to A*STAR’s goal of creating excellent science towards better healthcare in society."

Dr Wan graduated with a BSc in Biochemistry and Cell Biology from the University of California, San Diego, and received her PhD in Cancer Biology from Stanford University, USA. She was also a recipient of the A*STAR National Science Scholarship.

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About the Genome Institute of Singapore (GIS)

The Genome Institute of Singapore (GIS) is an institute of the Agency for Science, Technology and Research (A*STAR). It has a global vision that seeks to use

genomic sciences to achieve extraordinary improvements in human health and public prosperity. Established in 2000 as a centre for genomic discovery, the GIS will pursue the integration of technology, genetics and biology towards academic, economic and societal impact.

The key research areas at the GIS include Human Genetics, Infectious Diseases, Cancer Therapeutics and Stratified Oncology, Stem Cell and Regenerative Biology, Cancer Stem Cell Biology, Computational and Systems Biology, and Translational Research.

The genomics infrastructure at the GIS is utilised to train new scientific talent, to function as a bridge for academic and industrial research, and to explore scientific questions of high impact.

For more information about GIS, please visit: www.gis.a-star.edu.sg

About the Agency for Science, Technology and Research (A*STAR)

The Agency for Science, Technology and Research (A*STAR) is Singapore's lead public sector agency that fosters world-class scientific research and talent to drive economic growth and transform Singapore into a vibrant knowledge-based and innovation driven economy.

In line with its mission-oriented mandate, A*STAR spearheads research and development in fields that are essential to growing Singapore's manufacturing sector and catalysing new growth industries. A*STAR supports these economic clusters by providing intellectual, human and industrial capital to its partners in industry.

A*STAR oversees 18 biomedical sciences and physical sciences and engineering research entities, located in Biopolis and Fusionopolis, as well as their vicinity. These two R&D hubs house a bustling and diverse community of local and international research scientists and engineers from A*STAR's research entities as well as a growing number of corporate laboratories.

For more information about A*STAR, please visit: www.a-star.edu.sg

About the Society in Science - Branco Weiss Fellowship

Society in Science – The Branco Weiss Fellowship was founded in 2002 to provide a platform for postdoctoral researchers in the natural sciences, engineering and social sciences who are aiming to extend their scientific work to cover specific social and cultural questions and perspectives. To qualify for the prestigious grant, candidates must hold a PhD and provide evidence of outstanding scientific achievement. Every year, up to ten fellows are awarded with a generous personal research grant, giving them the freedom to work on whatever topic they choose anywhere in the world, for up to five years. Ideally, fellows pursue unconventional

projects in new areas of science, engineering and social sciences.

The fellowship was initiated and financed by the Swiss entrepreneur Dr. Branco Weiss, who died in 2010. It belongs to ETH Zurich (Swiss Federal Institute of Technology Zurich). Professor Peter Chen, former Vice President of Research and Corporate Relations at the ETH Zurich, and Heidi Wunderli-Allenspach, former Rector at ETH Zurich and Deputy to the President, direct the fellowship program. They are supported by ETH Zurich's strategy committee, consisting of prominent international scholars from a wide array of disciplines.

For more information on Society in Science, please visit www.society-in-science.org