Press release

Heineken Young Scientists Award 2020 in Medical/Biomedical Sciences awarded to **Meta Roestenberg**

Meta Roestenberg
Photo: Milette Raats

The Royal Netherlands Academy of Arts and Sciences has awarded the Heineken Young Scientists Award 2020 in the Medical/Biomedical Sciences to Meta Roestenberg (b. 1981), an internist-infectiologist at Leiden University Medical Centre. She is receiving the award for her research on the development of a malaria vaccine.

The Heineken Young Scientists Awards are important incentive prizes for young researchers whose outstanding achievements mean that they set an example for other young scientists. Each prize comprises a monetary award of EUR 10,000 and an artwork.

The jury describes Meta Roestenberg as an international pioneer in the field of human infection models for the development of vaccines against poverty-related infectious diseases. The research involves healthy subjects being infected with, for example, malaria parasites while receiving a candidate vaccine, so that the researchers can safely investigate the efficacy of the vaccine. Roestenberg is someone who has been able to accelerate development of new vaccines and medication for malaria in an unrivalled manner. Her research is clinically challenging and highly innovative from the scientific perspective. She is a true university researcher; highly active in the research, teaching and clinical fields, with a view to applying innovations in patient care both in Europe and beyond.

Research on a malaria vaccine

Together with colleagues in Nijmegen, Roestenberg developed a candidate vaccine using malaria parasites that have been genetically modified. As a result, the parasites are unable to develop effectively in the body of the host, namely humans. These do not fall ill, but their immune system does thus come into contact with the parasite, meaning that they develop immunity. Because the parasites cannot develop properly, the infected person can then not act as a source of infection for new mosquitoes that can go on to spread the disease. The candidate vaccine developed by Roestenberg and her colleagues is the first genetically modified vaccine in the world. It was announced in May this year that it works reasonably well but not yet optimally. Roestenberg will carry out further development in the coming years.

With some 228 million cases and more than 400,000 deaths each year, malaria is one of the world's most serious infectious diseases, affecting young children in particular. The deadliest

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form of malaria is caused by a single-celled parasite, *Plasmodium falciparum*, which is transmitted from person to person by mosquitoes. Over the past five years, the number of deaths has been rising again. A vaccine can be a decisive factor in combatting the disease, but even after decades of research, there is only a single vaccine that is now being tested in three African countries and is not yet optimally effective.

About the laureate

Meta Roestenberg studied medicine at Maastricht University, graduating cum laude in 2004. She did internships in countries including India, Namibia, and the Philippines. She also completed her PhD research at Radboud Universiteit in Nijmegen cum laude. In her dissertation she showed that if healthy volunteers are bitten by malaria mosquitoes and at the same time receive malaria medication, they are protected against the disease for a lengthy period.

In parallel with her PhD programme Roestenberg specialised as an internist-infectiologist. Since 2014, she has combined clinical work in travel medicine and tropical diseases at Leiden University Medical Centre (LUMC) with research on new vaccines for infectious diseases that have a major impact on global health, such as schistosomiasis (bilharzia), hookworms, and clostridium. She also heads the Leiden Controlled Human Infection Center.

Roestenberg is an internationally recognised expert in the field of human infection models and vaccine development. She is also a highly sought-after speaker, a member of the WHO's malaria vaccine Advisory Committee, and a contributor to global (ethical) guidelines for these complex clinical trials.

Heineken Young Scientists Awards

Meta Roestenberg is one of four researchers receiving this year's Heineken Young Scientists Award. The winners are selected from four research domains: Medical/Biomedical Sciences, Humanities, Natural Sciences and Social Sciences. The jury consists of Academy members and members or alumni of The Young Academy. This year, it was chaired by Carl Figdor, an Academy member and professor of immunology at Radboud University Nijmegen. Each prize comprises a monetary award of EUR 10,000 (funded by the Alfred Heineken Fondsen Foundation) and an artwork.

The Heineken Young Scientists Awards are among the ten prizes making up the biennial Heineken Prizes for Science and the Arts. The winners of the Heineken Prizes will receive their prize on Thursday 1 October 2020.

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Note for editors

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For visuals relating to the Heineken Young Scientists Awards, click here.

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About the Heineken Prizes

Over the past five decades, the Heineken Prizes have become an internationally renowned distinction. They are the Netherlands' most prestigious prizes in the arts and sciences. Every two years, five internationally renowned researchers and one artist, who lives and works in the Netherlands, are honoured. The work of the laureates offers new perspectives, achieves unexpected breakthroughs, and opens up new avenues for others. Since 2010 future generations are also celebrated. Four highly promising young researchers working at Dutch research institutes receive the Heineken Young Scientists Awards.

The laureates are selected by juries made up of members of the Royal Netherlands Academy of Arts and Sciences, the Young Academy, and international experts. The Heineken science prizes include a monetary reward of USD 200,000. The artist receives EUR 100,000, half of which is intended for a publication and/or exhibition. The incentive prizes for young scientists are EUR 10,000 each.

The Heineken Prizes were instituted in 1964 by Alfred H. Heineken (1923–2002) in honour of his father Dr Henry P. Heineken (1886–1971). In that year the Dr H.P. Heineken Prize for Biochemistry and Biophysics was awarded for the first time. It has since been joined by five other Heineken Prizes: the Dr A.H. Heineken Prize for Art (1988), for Medicine (1989), for Environmental Sciences (1990) and for History (1990), and the C.L. Carvalho-Heineken Prize for Cognitive Science (2006).

Alfred Heineken's daughter, Charlene L. de Carvalho-Heineken (b. 1954), is continuing this tradition as chair of the Alfred Heineken Fondsen Foundation and the Dr A.H. Heineken Foundation for Art, which finance the prizes.

For more information, go to www.heinekenprizes.org and Instagram @heinekenprizes.

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