**Jury Report**
**For Women In Science Rising Talent Prizes 2023**

The Royal Holland Society of Sciences and Humanities (KHMW) is delighted with the initiative of L'Oréal Netherlands and the Netherlands Commission for Unesco to encourage talented young female researchers in their pursuit of an academic research career. The Society embraced the initiative of Rising Talent Prizes, in the framework of the For Women In Science programme, and was more than willing to accommodate the selection of nominations. Given the astounding quality of nominations, and the number of nominations, 74 in total, the jury had a hard time selecting the prize winners. The jury was deeply impressed and inspired by the abundance of up-and-coming talent among young female researchers in all corners of the life sciences, the physical sciences, technology, engineering and mathematics. With so much brilliance in the population of female researchers, academia is definitely set for a transformation in the decades to come. All candidates show great promise for the future, in pushing the boundaries of our current knowledge and creating a better world.

**Honorable mention – Miek Schlangen, Food Process Engineering, Wageningen University & Research**

I am very pleased to sing the praise of the youngest nominee for the 2023 competition for the L'Oréal-UNESCO For Women in Science Rising Talent Prizes. This nominee is Miek Schlangen. She is a highly ambitious and talented PhD candidate, who is fully committed to the search for meat analogues. Miek Schlangen managed to kickstart her PhD research project at Wageningen University & Research with a 250,000 US$ research grant, which she secured, at her own initiative, from the Good Food Institute. Securing your own research funding as a potential PhD candidate is very unusual in the research fields of science, technology, engineering, mathematics and life sciences, and the fact that Miek secured this grant in a global competition with much more senior researchers, most of them established faculty members at universities worldwide, is nothing short of remarkable.

Miek's research work addresses the challenge of meat analogue structuring for better texture and sustainability of meat alternatives. She already designed and demonstrated a tailor-made dry fractionation process to improve the resource efficiency in producing meat alternatives, and she engineered a new method for the use of enzymes to improve the functionality of protein-rich ingredients. The importance of this work for building a more sustainable food system cannot be underestimated.

According to the Good Food Institute's Vice President of Science and Technology, Miek Schlangen has already, after a few short years as a PhD researcher, positioned herself as a leader in the alternative protein research ecosystem. She is furthermore applauded as a gifted scientific communicator, excelling in technical talks and in the dynamic setting of live discussion panels. Her talents do not go unnoticed. She is being invited as a speaker at international conferences, and she won several travel grants and student challenges. She is also commended for her commitment to building a welcoming, inclusive and collaborative research community, which is amongst others apparent from her commitment to the wellbeing of her fellow PhD students, as secretary of the Wageningen PhD council.

Perhaps the greatest compliment comes from one of the students that she supervised in their bachelors and masters projects: "Not only have you taught me a ton about meat analogues and scientific research, you have also helped me in dealing with my inner critic. I admire the enthusiasm and dedication you have for your work and I am sure you will inspire many more students."

On behalf of the Royal Society, I congratulate you on your honorable mention from the jury for the Women in Science Rising Talent Prize. We are looking forward to your future research contributions and wish you good luck in the pursuit of your research career.

**Honorable mention – Agathe Balayn, Computer Science / Human Computer Interaction & Machine Learning, Delft University of Technology**

The jury wishes to attribute an honorable mention to Agathe Balayn, who is currently a PhD candidate at Delft University of Technology. Prior to her period as PhD candidate, Agathe Balayn obtained no less than two master diplomas, one in Computer Science from Delft University of Technology (the Netherlands), and another one in Systems & Control from the ENSTA ParisTech Institut Polytechnique de Paris (France).

Agathe Balayn is concerned with making machine learning technologies beneficial to the greatest number of people. Machine learning technologies and artificial intelligence have already been the subject of a huge volume of scientific research, but this has not discouraged Agathe Balayn from tackling such an important research question, in her own way. Instead of concentrating on algorithmic research, as the majority of the community does, she chose to take a step back and has carved out her own, novel research path, demonstrating her courage, curiosity and originality. In her own words she describes her research as: "I build tools to help developers of Machine Learning systems create harmless systems."

Too often we have seen machine learning leading to unexpected failures with severe social and ethical implications. Rather than working on technical fixes, as the vast majority of the research community does, Agathe takes a broader sociotechnical angle, expanding the current research scope of machine learning and contributing fundamentally new insights and methodology to the machine learning field. The significance of her work is well recognized by the research communities in Artificial Intelligence and Human-Computer Interaction. She has furthermore been invited to contribute to policy projects outside of her academic work, and in particular she has directly contributed to the development of the new Artificial Intelligence regulations of the European Union. Her research will surely grow in significance in the coming years, as society will need guidance to make educated choices. Her achievements reveal her drive to develop technologies and frameworks that will directly benefit society.

The jury was impressed by the interdisciplinarity that is required from Agathe Balayn to develop her research line - ranging from mathematics, to computer science and human-centered studies.

Overall, the jury concurs with Agathe Balayn's enthusiastic nominators that she has made a very promising start to a brilliant, unique, and successful academic career, and wishes to encourage her to continue with the same dedication in the years to come. Congratulations!

**Third prize – Marieke van de Loosdrecht, Evolutionary biology / Ancient DNA and population genetics research, Wageningen University & Research**

Marieke van de Loosdrecht specializes in a fascinating and highly innovative area of research that connects several disciplines. While we know that working across disciplines is where new exciting discoveries can be made, most of us struggle to initiate and propagate such science. This is where Marieke van de Loosdrecht stands out with her ability to combine genetics, archaeology, ethnography, ecology and crop science at the highest scientific level. She studied Biology at Groningen University and obtained her Bachelor with distinction (meaning she belonged to the top 5% of her peers). This was followed by a Masters in Ecology and Evolution, which she again completed with distinction. She then left Groningen to do a PhD in Genetics at the world class Max-Planck Institute for the Science of Human History in Jena, Germany. She graduated for her PhD with Summa cum Laude.

She continued as a post-doctoral fellow until she moved back to the Netherlands, to Wageningen University. During her PhD, she worked on ancient hunter-gatherers and prehistoric farmers of the Mediterranean but then she went for a new, botanical route in archaeogenetics which allows her to make connections with historical, social and sustainability driven research. To this end, she has conducted genomic analysis of rice varieties that are cultivated by the Maroon farmers in Suriname who are the descendants from enslaved African people who escaped the plantations during colonial times (1500-1870). She has found that some of their rice varieties originate from traditional rice varieties in West Africa indicating that they are linked to transatlantic slave trade and their propagation by Maroons. She reached these conclusions by combining the Maroon oral history with the genomics analysis that contradict historical records written by colonial authorities and acknowledge the important contribution of Maroons to the origin and development of farming practices in the Americas. Her work also contributes to the identification of rice varieties that, unlike currently available commercial ones, are resilient to environmental changes as a result of climate change. Her work therefore also contributes to the future of food security.

The jury was touched by her statement:
"If I would be awarded prize money then I would like to travel to Maroon communities and, if possible, the Suriname government, to communicate my research results and spread awareness on the importance of preserving the existing Maroon rice diversity for food security, as well as a means to honouring and remembering the past."

Therefore, it is with full conviction that the jury awards the For Women in Science Rising Talent - Third Prize to Marieke van de Loosdrecht for the future of science and its contribution to societies worldwide.


**Second prize – Aranka Ballering, Epidemiology, University of Groningen**

The jury has awarded the For Women in Science Rising Talent - Second Prize to Aranka Ballering, PhD candidate at Groningen University Medical Center since April 2019, for her research on sex- and gender bias in medical practice. Aranka graduated as a Master of Science in Global Health at Maastricht University, after obtaining another Master's degree, cum laude, in Biomedical Sciences, from the Free University of Amsterdam.

Aranka investigates to what extent sex and gender differences exist in medical trajectories of patients with physical symptoms such as headaches, dizziness and tiredness. Aranka showed that women experience more numerous, severe and persistent physical symptoms than men in general, but also after COVID-19. Furthermore, she showed that women are less likely to be properly diagnosed than men with similar symptoms, as women receive fewer physical examinations, X-rays and referrals to specialists for their symptoms than men, and even if women are provided with diagnostic tools, they were found less effective in detecting disease in women than in men.

In her work she has successfully mastered different types of methodologies, which allowed her to develop a strong interdisciplinary research line. Even while still a PhD candidate, she is already recognized as an extremely broad-skilled researcher, mastering qualitative, advanced statistical and observational methodologies, as well as different data collection methods. She is a prolific scientific author, who has already published 16 open-access scientific articles, of which 12 as lead author, in leading high-impact journals, including The Lancet. At the same time, she tirelessly engages in outreach activities to non-academic audiences, and she does so in very creative ways, not only through the regular news media, but also including podcasts, games, e-learning for healthcare professionals, and she even participated in scientific theatre shows for children.

Aranka is commended as an intelligent, inspiring and exemplary academic researcher, and it comes as no surprise that she already won an impressive number of grants and awards for her work, including a People's Choice Award, an Open Research award from the University of Groningen, a Young Investigator Award from the International Society of Gender medicine and a Travel Grant from the European Association of Psychosomatic Medicine, to name just a few. She is a role model for PhD students and, with her ambitious and collaborative attitude, we think she is destined for a bright future in science. The jury hopes this second prize in the For Women in Science Rising Talent competition will strengthen your resolve to pursue your research dreams. We wish you a bright future in science.


**First prize – Yevheniia Cheipesh, Theoretical physics, Leiden University**

The jury has awarded the For Women in Science Rising Talent – First Prize to Yevheniia Cheipesh, who received her PhD degree from the Instituut-Lorentz for Theoretical Physics at Leiden University, in 2022. Prior to her period as PhD candidate, Dr. Cheipesh obtained her B.Sc. in quantum field theory from the Taras Shevchenko University of Kyiv and her M.Sc. degree in solid-state physics from the University of Goettingen.

Dr. Cheipesh's PhD work in theoretical physics focused on Majorana fermions, which represent a special type of particle that is equivalent to its own antiparticle. Such Majorana particles have not been experimentally detected, and Dr. Cheipesh seeks to analyze theoretically what the unique signatures of a Majorana fermion are that could be detected within a noisy background. Importantly, Dr. Cheipesh seeks to do so in two different domains of physics: the high-energy range probed by particle physics, and the low-energy range probed by solid-state physics. To do so, she uses computational tools based on analytical and numerical techniques that can be transferred from one domain to the other, despite the energy scales being vastly different.

In addition to her successful PhD research together with her direct supervisor Prof. Carlo Beenakker, Dr. Cheipesh has also independently initiated and carried out projects and collaborations with other researchers. Notably, in a collaboration with two other colleagues from Leiden University, she made a highly impactful contribution to a large international consortium working on the PTOLEMY project for neutrino detection at CERN. Let me quote Carlo Beenakker in his nomination letter: "These are all high-profile established professors, and here comes a young researcher who explains to them that their detector has a fundamental flaw." They acknowledged the flaw, and Yevheniia co-authored a paper with the entire 60+ authors collaboration in Phys. Rev. D, which concludes that a complete redesign of the experiment is needed. Since then, the detector design has been adapted, and Yevheniia herself has become a key member of the consortium. Overall, Dr. Cheipesh's research has resulted in 14 publications, including 6 on which she was the lead author.

In addition to her research contributions, Dr. Cheipesh is an active teacher: while engaged in her PhD research, she has remained in touch with her home base in Ukraine to teach courses in physics at various levels there; furthermore, she has performed indispensable developmental work to the Advanced Theory Track program at Leiden University, and showed a tremendous amount of motivation, creativity and knowledge in doing so.

The jury agrees with the assessment of Dr. Cheipesh's nominators that she has demonstrated a very promising start of a high-profile academic career. She has already made impactful contributions to a wide range of fundamental problems in physics, and her research achievements show an independence and maturity that is highly unusual for someone who has just finished her PhD. In short, the jury fully agrees with the nominators that Dr. Cheipesh deserves the recognition of the first prize in the For Women in Science Rising Talent competition.

On behalf of the jury, I am happy to congratulate Yevheniia Cheipesh with the First Prize. The jury trusts this award will contribute to boosting your scientific career, and we wish you success and fulfillment in the pursuit of your research ambitions.


*Prof. dr. N.H. (Nynke) Dekker, Professor of single molecule nanoscale biophysics, Kavli Institute of Nanoscience, Delft University of Technology*
*Prof. dr. N.H. (Nathalie) Katsonis, Professor of chemistry, Stratingh Institute of Chemistry, University of Groningen*
*Prof. dr. ir. H.M. (Hester) den Ruijter, Professor of cardiovascular disease in women, Department of Experimental Cardiology, UMC Utrecht*
*Prof. dr. M. (Maria) Yazdanbakhsh, Professor in cellular immunology of parasitic infections and head of the department of Parasitology, Leiden University Medical Center*
*Prof. dr. ir. M.P.C. (Margot) Weijnen, Professor of process and energy engineering, Delft University of Technology, member of the Executive Board NWO, director of NWO domain Applied and Engineering Sciences.*

The jury meeting took place 9 March 2023, was chaired by Prof. dr. ir. M.P.C. (Margot) Weijnen, and also attended by Prof. dr. A.P. (Ad) IJzerman, Secretary of Natural and Medical Sciences KHMW and E.I. (Édith) van Leerdam, secretariat KHMW (minutes).