

The 2025 Marcus Wallenberg Prize

Description

Dr. Gerald Tuskan receives the 2025 Marcus Wallenberg Prize

Pioneering work in sequencing and analyzing the first tree genome

The 2025 Marcus Wallenberg Prize is awarded to Dr Gerald Tuskan for his pioneering work in sequencing and analyzing the first tree genome. Her Royal Highness Crown Princess presented the prize on Monday 3 November in Stockholm. The Prize sum is 2.5 MSEK.

Dr. Tuskan led the project to sequence the genome of the black cottonwood tree (*Populus trichocarpa*), which was published in 2006. His leadership in this project has revolutionized research in tree and forest genomics and biotechnology, paving the way for genome-based breeding of commercially important trees.

His work has established the *Populus* genus (poplars, aspens and cottonwoods) as a model for molecular genetic studies, including wood biology and tree phenology. This project has laid the foundation for many other tree genome sequencing projects, including conifers such as Norway spruce and loblolly pine, as well as the important plantation tree eucalypt.

Dr. Tuskan has significantly contributed to advance genome-based selection in tree breeding. In comparison to traditional breeding, genome-based tree breeding enhances the rate of genetic gain by reducing generation intervals and improving accuracy. This allows for more agile adjustments of tree properties, for instance to increase trees' tolerance to ongoing climate change and resistance to climate-induced pests and pathogens.

In addition to his research achievements, Dr. Tuskan has promoted collaboration across the disciplines of molecular biology, ecology and environmental sciences and built a global network of researchers focused on improving tree genetics and sustainability.

Key facts about the laureate

GERALD A. TUSKAN is the Director and Chief Executive Officer of the U.S. Department of Energy (DOE) Center for Bioenergy Innovation at the Oak Ridge National Laboratory (ORNL).

He has published more than 350 papers, many of which are highly cited including those related to his leading role in sequencing the first tree genome, that of the black cottonwood, *Populus trichocarpa* in 2006.

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The Marcus Wallenberg Prize is an international prize with the purpose of recognizing, encouraging, and stimulating pathbreaking scientific achievements, which contribute significantly to broadening knowledge and to technical development within the fields of importance to forestry and forest industries.
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