

Otso Ovaskainen

THE VÄISÄLÄ PRIZE was awarded in 2018 to Professor Otso Ovaskainen.

Ovaskainen was born in 1970 and obtained a doctorate in mathematics from Helsinki University of Technology in 1998, after which he moved to a post-doctoral research position at the University of Helsinki, in the Metapopulation Research Group headed by Professor Ilkka Hanski. As he puts it,

"I was interested in both biology and mathematics but decided to study mathematics. My thesis had nothing to do with biology at all; it was an application of mathematics to physics. But I had been active in the Finnish Nature League and had learned to take nature conservation seriously. This gradually made me realize that there was such a thing as mathematical biology. So I decided to contact Professor Hanski, and a job was arranged in his team within three days. It was the case then, and still is now, that in biology there's a crying shortage of researchers capable of mathematical and statistical modelling."

After a year at Cambridge, Ovaskainen returned to Helsinki, where he founded a group of mathematical biologists to work at the Metapopulation Research Centre. In 2009 he was appointed professor of mathematical ecology. In 2018 his research group came to form part of the Research Centre for Ecological Change, which concentrates chiefly on long-term environmental changes. "My qualification in mathematics opened doors for me in ecological research, because there are far fewer mathematicians available to take up ecology than there are people who have studied biology. In my present work as a professor I have also supervised doctoral theses based on empirical research, and my own work represents a combination of several disciplines, including mathematics, statistics, computer programming and ecology", Ovaskainen points out.

Professor Ovaskainen's research has involved a series of innovative applications of his mathematical versatility to various fields of biology ranging from metapopula-

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tion research and the movements of organisms to community ecology. He was awarded a European Research Council Starting Grant in 2008, the first year when this source of finance was available. Ovaskainen describes his work in this way: "Getting the Starting Grant did a lot for my career. It meant funding of 1.5 million euros over five years, allowing me to form my own research team. In recent years we have been concentrating on the ecology of communities of living organisms and their statistical modelling. We are especially interested in species rich communities consisting of many species, how they can be modelled and how their fate can be predicted when the environment in which they live undergoes change."

In 2009 Ovaskainen received a Prize for Scientific Courage from the Academy of Finland, and the same courageous attitude has characterized his work since that time. One example is his group's research into the global fungal flora, based on measuring devices installed at 50 sites across the

world in order to collect DNA samples from the air so that they can be sequenced and identified to species. "It would be impossible for human technicians to recognize the species from millions of sequences, but with AI, which in this case means computer modelling, it can be done. Amazing leaps forward have taken place in recent years, so that it is now possible to both collect and process bodies of material that we could scarcely dream about earlier. The important thing, however, is not the volume of material but what we can learn from it, and that will still call for a great deal of human work."

In the wording of its decision to award the prize to Otso Ovaskainen the Finnish Academy of Science and Letters lays special emphasis on his ability to carry out multidisciplinary research.

Väisälä Prize is awarded annually to 1–3 already distinguished scientists in the active parts of their careers.