

Young Researchers' Challenge Analysis Report

2006 – 2019

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2021-08-27



Executive Summary

The Marcus Wallenberg Foundation annually invites young researchers to the Marcus Wallenberg Prize event through the *Young Researchers' Challenge*. Upon application, the young researchers are encouraged to describe their research and how it may contribute to both the forest-based industry and the society. Some thirty chosen applicants are invited to the prize ceremony in Stockholm and are given the opportunity to present their research at the appurtenant symposium.

As of today, a total of 445 young researchers have participated in the Young Researchers' Challenge over fifteen years. By recognizing these aspiring young postdocs and Ph.D. students, the purpose of the program is to encourage further research and networking opportunities between themselves and senior researchers.

The program initially invited people solely from Sweden and Finland until opening for other European countries in 2010. The Nordic countries alone make up 87% of all participants' current place of work. In 2013, the program reached the first participants outside of Europe. Since then, the number of international participants are increasing. Today, 92% (411) of all participants are employed in Europe and the remaining 8% (34) overseas.

This analysis intends to highlight the participants' further work and successes such as their current employment, number of scientific articles published and how many of them that may have applied for patents. The information was collected through open sources such as scientific and patent databases, university and company websites, ResearchGate and LinkedIn.



After collecting the data, interesting statistics were generated. For instance, the results show that a researcher position is the most common current employment type among all participants. Also, 9% (39) have reached one or more levels of professorship.

Another significant finding was the number of Ph.D. holders among the participants. Over 85% of all participants hold a Ph.D. degree today and more are to come, as several participants are expected to defend their Ph.D. theses within the coming years.

Besides researchers (including Ph.D. students), many of the participants are employed as managers, specialists and engineers. An important and notable detail related to the participants' current employment is that, irrespective of any employment type, participants tend to have stayed working within the forest-based industry or within related areas.

The participants have published a total of nearly 7,800 scientific articles on

ResearchGate and together been cited over 151,000 times.

A surprisingly large number, 23% (104) of all participants have applied for patents of which many are related to, and may be of importance to, the forest-based industry.

There were several significant and remarkable findings from the statistics which are possibly useful for future communication of the program, inspiring both new and previous participants.

To offer participants a new dimension to the program and to meet their high ambitions, it may be of interest to introduce an alumni network. An established alumni network could offer alumni events, lectures, mentorships, ambassadorships and, at the least, an online discussion forum. Concerning the critical challenges that the world is facing, networking among researchers and company employees, all at different levels of experience, may be of high importance for the collaboration towards a sustainable world.

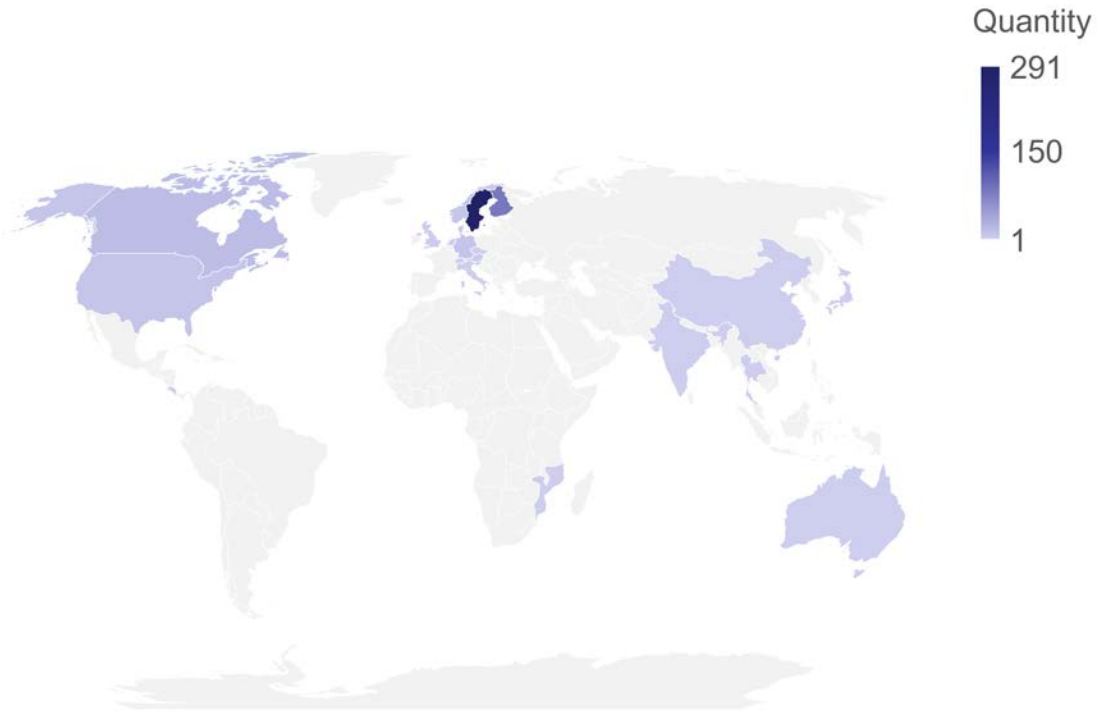
Geographic Distribution

Over the years, the participants of originally ten countries have spread out across the globe. Today, previous participants are found working in twenty-three different countries.

Over 65% (291) of all participants are working in Sweden and 19% (83) in Finland. The third most common country of employment is Canada, where 4% (17) of all participants work today.

Data on the participants' nationalities was not gathered and may differ from the places of employment.

Alumni Map

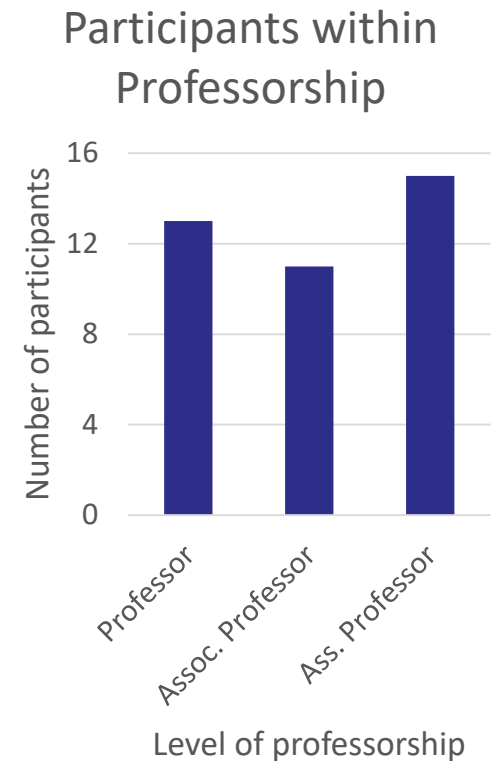
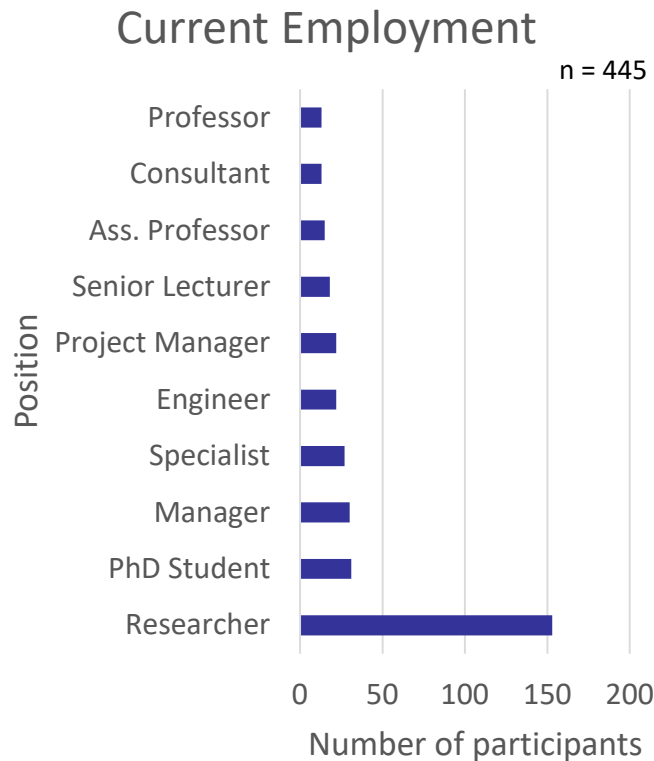


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Overall Overview

A vast majority of the participants are employed as researchers at universities, companies and other organizations. Beside researchers, as seen in the left diagram of the ten most common employment types, many of the participants are Ph.D. students, managers and specialists.

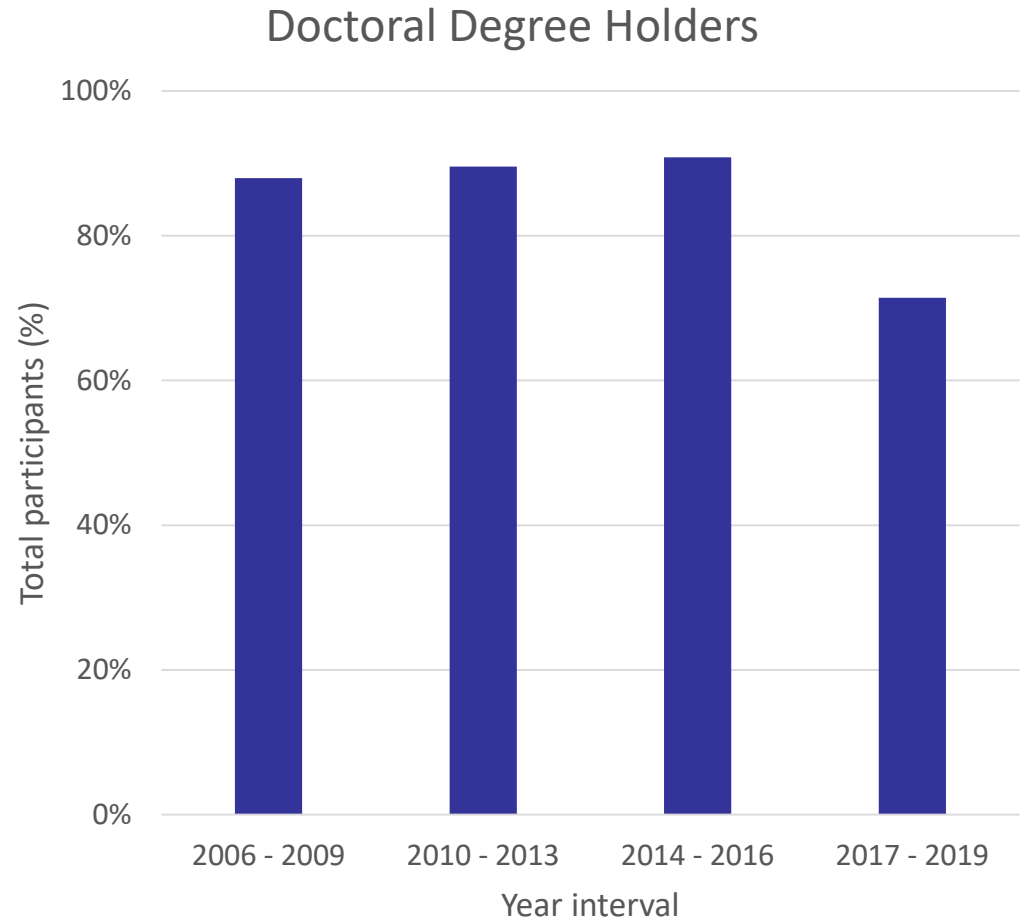
The right diagram visualizes the 39 participants who had reached different levels of professorship; full, associate and assistant professors.



Doctorate Statistics

In total, 85% (379) of all participants hold a doctoral degree. Of the remaining 15%, there are several Ph.D. students of which a few plan to have defended their theses within the next year.

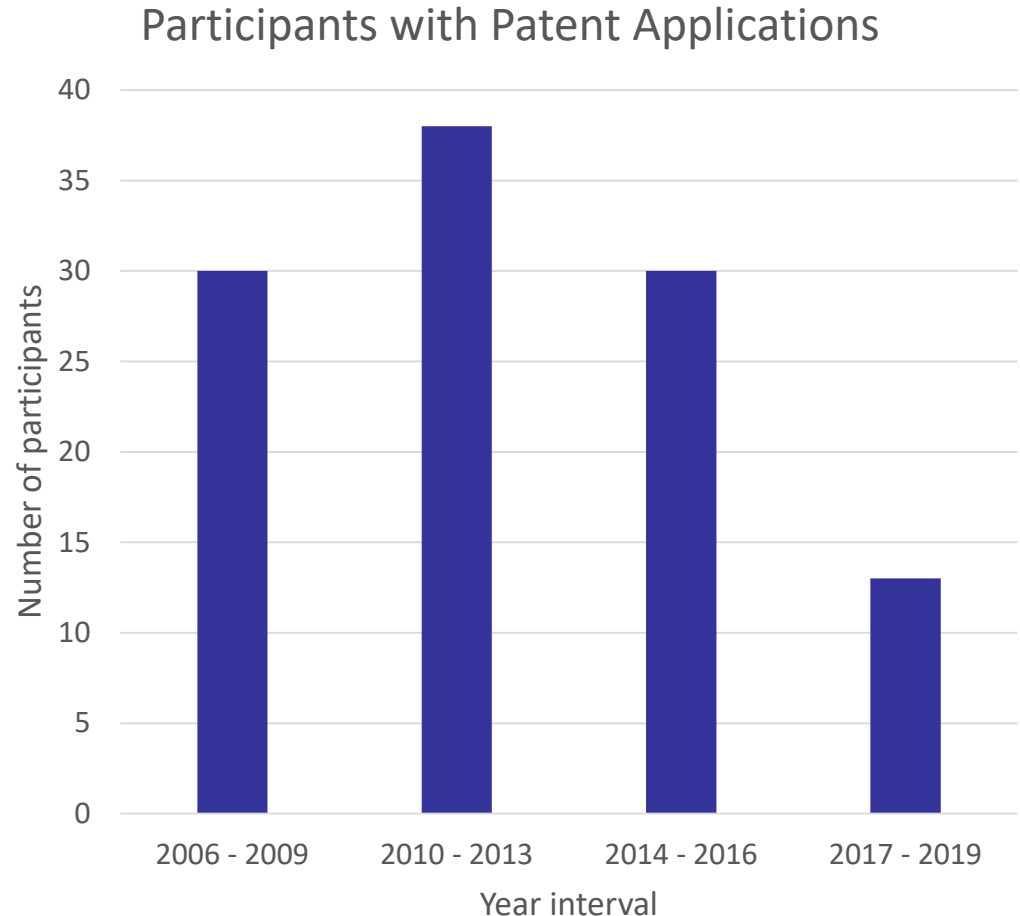
Besides the Ph.D. students and among those who had not defended a doctoral thesis, there are some who hold licentiate degrees.



Patent Applications

Through the help of Google Patents and PRV's patent database (Swedish Intellectual Property Office), it was found that several participants have applied for patents. The patent applications include active, abandoned and pending patents.

Among participants of the latest years, fewer have applied for patents. However, judged on the time passed since participation and by comparison to the earlier years, one could expect this number to increase within the next five years.



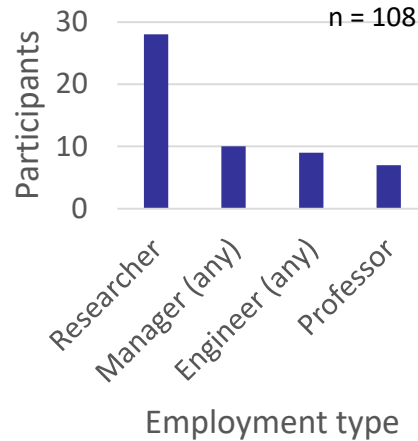
Current Employment statistics

These statistics show the four most common employment types per interval.

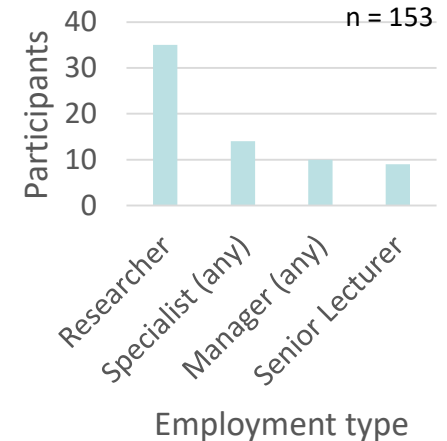
For all year intervals, most participants are employed as researchers today. One major difference is seen in the number of Ph.D. students between the latest and earlier years. Alike the statistics on Ph.D. and patents, the statistics on later participants is prone to change notably.

Some participants have more than one type of employment, where research is often one of them. For this reason, each type of employment was separated in the calculations.

2006 - 2009



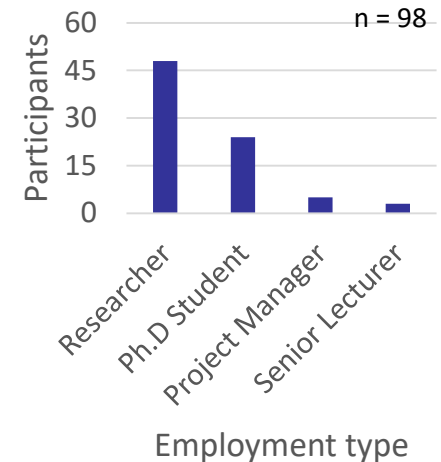
2010 - 2013



2014 - 2016



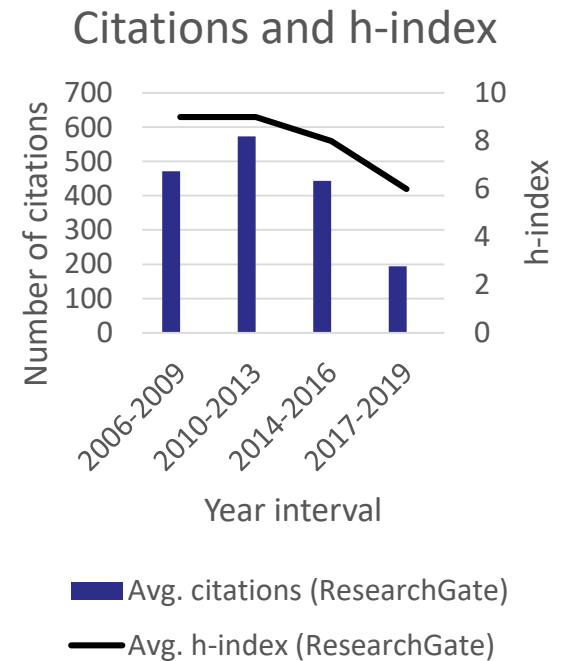
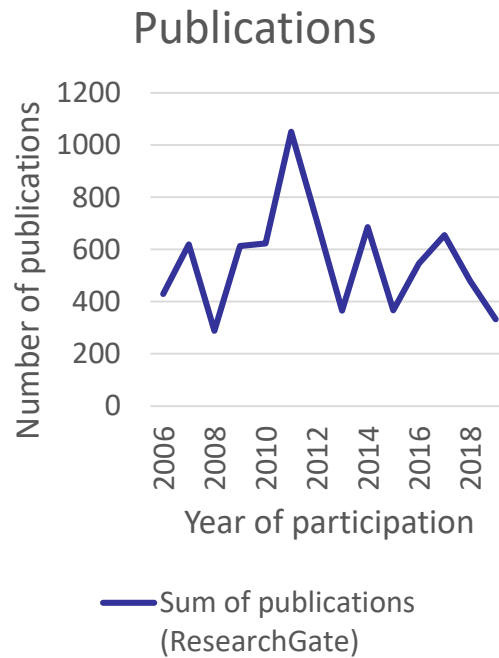
2017 - 2019



Scientific Publication Statistics

Statistics on participants' research were calculated with the help of ResearchGate - a researchers' online platform where scientific publications are uploaded, and statistics for each researcher are recorded.

For the participants available on ResearchGate, the sum of their publications was calculated for each year. For each year interval, the average number of citations and h-index was calculated. One interesting observation is that the statistics hit a peak around the years when the Young Researchers' Challenge opened for international participants. For the whole group, the average number of citations is 434.



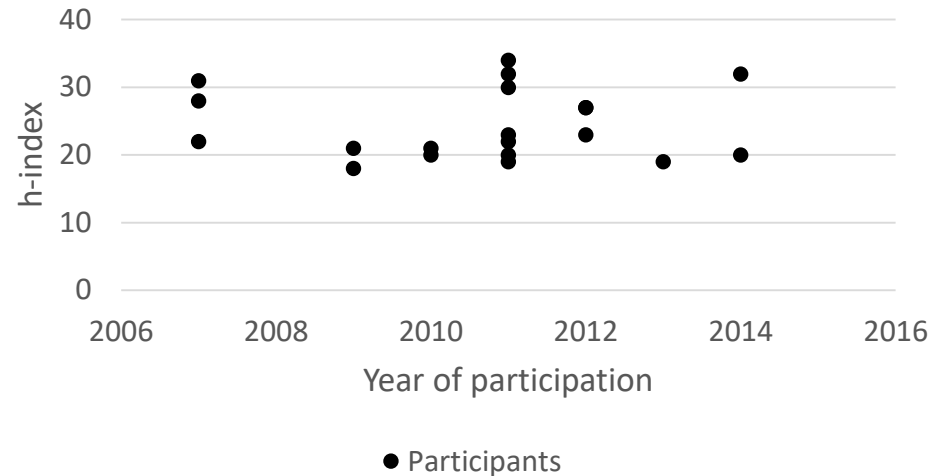
Impactful Researchers

From the ResearchGate-based statistics, further statistics were generated on participants with the twenty largest total number of citations and the highest h-index* respectively. In both categories, all twenty participants hold a Ph.D. degree.

Among the top twenty cited people, 40% have applied for patents. Of the researchers with the highest h-index, 35% have applied for patents.

*The h-index is a measurement on how impactful a researcher's work has been, by recording the correlation between the number of published scientific articles and the number of citations that each of the articles have got.

Top 20 h-index



Top 20 number of citations

