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The Dutch FOM/f Approach To Gender Balance in Physics

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Abstract. Almost 20 years ago, the Dutch Foundation for Fundamental Research on Matter (FOM) launched the FOM/f programme to encourage women to continue a career in physics after finishing their PhDs. As of 2016, 86% of the FOM/f laureates hold permanent positions in academic research, while 11 laureates have become full-time physics professors. Key to the success of the FOM/f programme is a customised personal approach. Since September 2015, FOM has been a partner in the European Horizon 2020 GENERA project, which aims to implement Gender Equality Plans customized for physics. The positive experience with the personal approach of the FOM/f programme and dedicated tenure-track programmes for women will be paramount for a future Gender Equality Plan for improving the gender balance in the physics community.

INTRODUCTION

Between 1990 and 2017, the absolute number of women among first-year bachelor students physics at the general and technical universities in the Netherlands increased from 97 to 259. In the same period, the percentage almost doubled from 10.9% in 1990 to 20% in 2017 (see Fig. 1). Most of these students had their first training in physics at a high school in the Netherlands. Since PhD students and postdocs at Dutch universities are recruited internationally, the percentage of women in their ranks is higher [2], about 23%. It is the challenge of the physics community in the Netherlands to reach at least the same level for the percentage of women among the permanent staff and at the professor level. Since 2008, organisations and companies in the Netherlands voluntarily can sign the Charter “Talent to the Top” [3], which monitors their ambitions for gender equality at higher level positions. The Netherlands Research Organisation (NWO) and all universities in the Netherlands and have signed the Charter. In 2009, also the Dutch Foundation for Fundamental Research (FOM) signed the Charter with the commitment of 20% women physicists appointed at permanent positions in 2020. Early 2016, these numbers were adapted to 25% in 2025. Several stimulation programmes, both at the universities and NWO, have been implemented to reach that goal. Among them is the FOM/f programme of the Dutch Foundation for Fundamental Research on Matter (FOM) that was already launched in 1999. We will report on the details of the FOM/f programme and the plans for future Gender Equality Plans for the NWO physics research institutes. Note that FOM has been fully integrated in the NWO organisation since 1 January 2016 and consequently the name of the programme has changed to NWO Physics//f.

THE FOM/F PROGRAMME

The key ingredient that distinguishes the FOM/f programme from other stimulation programmes is the customised personal approach together with a keen eye for the needs of the physics community in the Netherlands. The programme consists of three tools designed to stimulate and support women for a career in academic physics in the Netherlands after finishing a PhD: FOM/f grants, the Minerva prize and the FOM/f symposia.

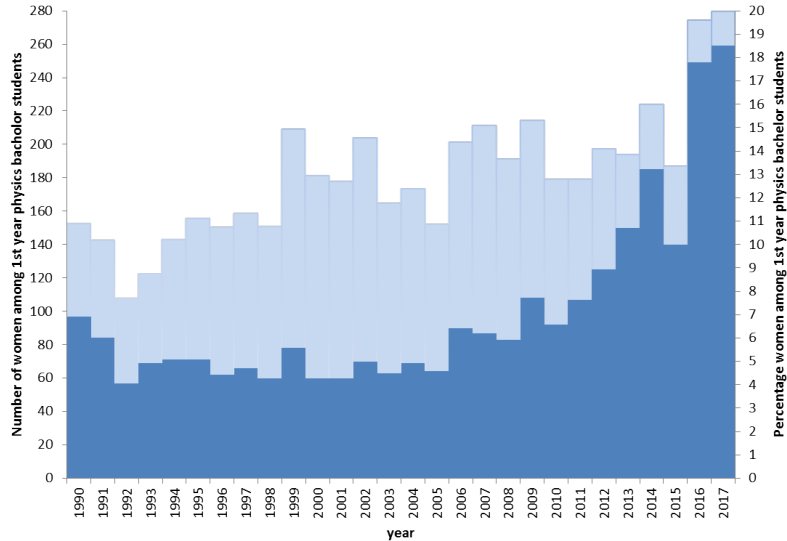


FIGURE 1. Number (dark blue) and percentage (light blue) of women among first-year bachelor physics students at the general and technical universities in the Netherlands per year [1].

The programme offers talented female physicists a customised three-year postdoctoral position that allows for a better work/life balance at a crucial moment in the academic career. Normally, after finishing their PhDs, students aiming at an academic career in the Netherlands must first find a postdoc position of at least two years abroad. The purpose is to gain experience in a different culture. Eligible candidates for a FOM/f postdoc grant are allowed a postdoc position in the Netherlands for three years, but they must also find a postdoc position abroad. In contrast to the normal procedure, the position abroad should be for at least one year and can be broken up into smaller units of time. This deviation from the standard procedure allows FOM/f postdocs to gain experience abroad, but during time windows that can be adjusted to allow for child and family care. Also, women who finished a PhD abroad but aim at an academic career in the Netherlands can apply for a FOM/f grant. They do not have to find the additional one-year postdoc position abroad, since they have already proven their ability to adjust to another culture as a PhD student abroad. Also, women who wish to return to research in the Netherlands after a long break can apply for a FOM/f grant.

Over time, the FOM/f programme gradually expanded by also offering physics institutes the possibility of attracting talented women with personal bridging grants of up to five years, designed to fill the gap until they find a permanent position. Without the usual rounds for grant applications with fixed deadlines, the emphasis of the FOM/f programme is on stimulating talented women in their early careers and less on competition.

In addition to the grants, the FOM/f programme contributes to the visibility of women in physics in the Netherlands with the bi-annual Minerva prize of €5000 for the best publication by a woman in a peer-reviewed physics journal. The prize is recognized by the full physics community as a prestigious award, which certainly serves its purpose in furthering the careers of excellent female physicists.

At the free-of-charge bi-annual FOM/f symposia, plenary physics talks are delivered exclusively by high-level international female physicists, while participants can improve their career skills at workshops about good scientific writing and presentation, as well as how to successfully apply for funding, find a good mentor and build an attractive CV. Designed for women only, the FOM/f symposia offer a platform where female physicists can expand their network and openly discuss challenges faced when competing in a male-dominated environment.

RESULTS OF THE PROGRAMME

Since the launch of FOM/f in December 1999, 39 women have received personal grants (Fig. 2). Today, 10 laureates are still consuming the grant, while of the remaining 29 laureates, 24 hold permanent positions in academic physics research and four chose a career outside academia. Stimulated by the FOM/f programme, 11 laureates have become full-time physics professors. These results demonstrate that the FOM/f programme has contributed to improving the presence and visibility of women in the physics community in the Netherlands. The percentage of women in permanent positions funded by FOM grew from 3% in 2010 to 16% in 2016. Including the universities, the percentage of women in permanent positions grew from 9% in 2010 to 13% in 2013. The aim is for women to hold 25% of all permanent positions by 2025. The FOM/f programme can help achieve this goal.

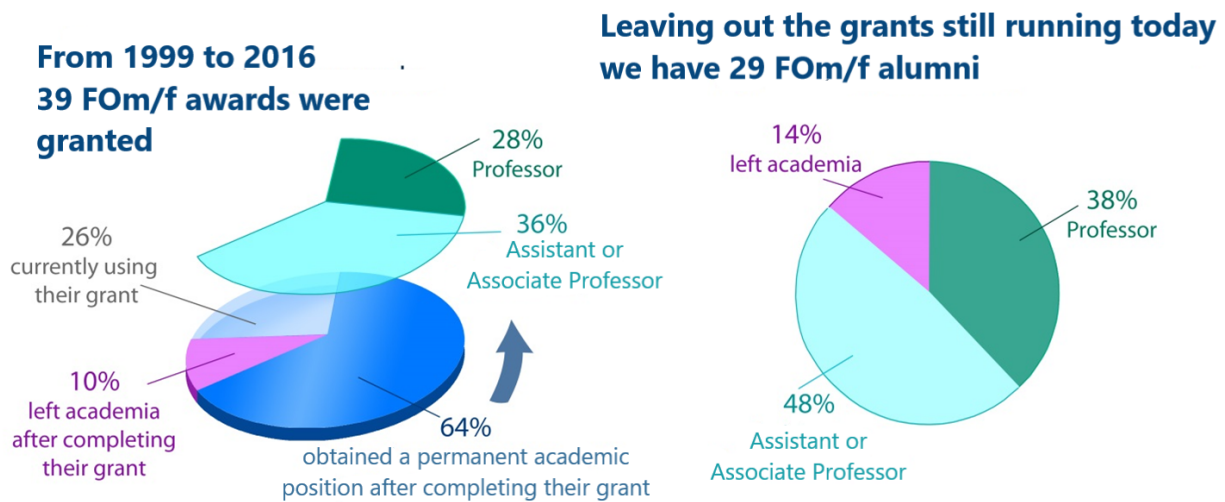


FIGURE 2. Status of all FOM/f laureates in 2016 (left) and status of FOM/f laureates in academia in 2016 (right) [2].

TENURE-TRACK PROGRAMMES FOR WOMEN IN SCIENCE

Universities in the Netherlands offer several stimulation programmes for tenure-track assistant professorships exclusively for women. In contrast to FOM/f, these programmes are for women in science and not for physics exclusively. Examples are the Rosalind Franklin programme of the University of Groningen, the Carolina MacGillavry fellowships at the University in Amsterdam, and the Joliot-Curie fellowships at the Radboud University in Nijmegen. In 2016, NWO started the WISE fellowship programme for women, for a tenure track position in an NWO research institute. Four out of nine are physics research institutes. The tenure-track programmes are popular and attract many talented women physicists, in particular from abroad. They contribute to both a higher percentage of women among physicists and an internationally highly recognised physics community in the Netherlands.

IMPROVING GENDER EQUALITY IN PHYSICS WITH GENERA

NWO [3] is a partner in the European H2020 GENERA project [4] which aims at designing and implementing Gender Equality Plans (GEPs) customised for the physics research community. The three-year project started in September of 2015. On November 1, 2016, high-level physics managers and HR management met with senior and early-career physicists at the first GENERA national Gender-in-Physics day to review the status quo and formulate recommendations for improving the gender balance in physics in the Netherlands [5]. One of the recommendations was to continue the FOM/f and the tenure-track stimulation programmes to attract and support talented women in physics in the Netherlands. Currently, NWO is preparing the implementation of future Gender Equality Plans in their physics research institutes using the GENERA tools.

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2. Percentages quoted in this paragraph were provided by the Netherlands Research Organisation (NWO).

3. Charter “Talent to the top” (in Dutch), <http://di-company.nl/wp-content/uploads/Charter-Talent-naar-de-Top.pdf>; monitored by D&I Company, <http://di-company.nl/english>.
4. GENERA (Gender Equality Network in the European Research Area), Horizon 2020 Project, Grant agreement number 665637, <http://www.genera.com>.
5. E. de Wolf, S. Hesping, A. de Hoogh, and P. Rudolf, “GENERA Gender-in-Physics Days in Europe,” contribution to this conference.