

Women in academia

This factsheet investigates the appointment of full professors, associate professors and assistant professors in Dutch academia in terms of candidate availability and job tenure.

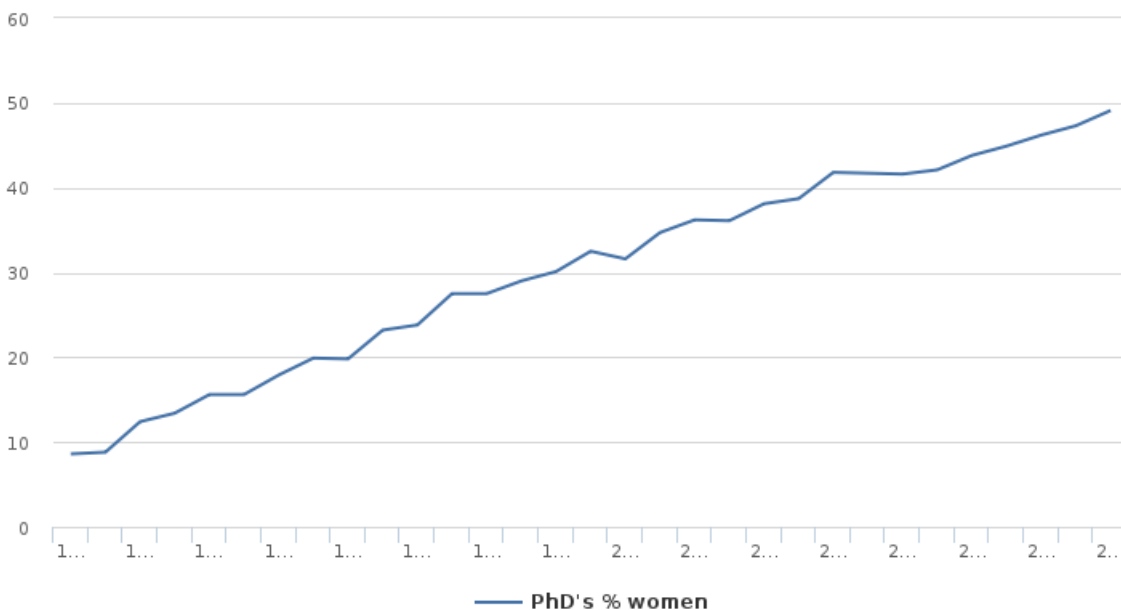
On 10 February 2017, it was precisely one hundred years ago that the Netherlands welcomed its first female professor when Johanna Westerdijk became Professor of Phytopathology by Special Appointment. There are now 832 women professors working at Dutch universities and university hospitals (2015 figures). That means that fewer than 20% of all professors in the Netherlands are women, even though female students have outnumbered male students since the start of the present century. Women are underrepresented in academia, and the higher up the academic ladder, the more lopsided the gender ratio becomes. If things keep on in this manner, it will be many decades before this changes ([LNVH, 2016](#) [1]). Policy meant to encourage more women in academia focuses mainly on appointments. This factsheet explores the appointment of professors, associate professors and assistant professors, with the number of appointments being related to candidate availability. Academics also leave their jobs at a university at a certain point, however. If there are gender patterns in that context, they may help explain the extremely slow progress of women in academia. This factsheet focuses on the relationship between candidate availability, appointments and departures.

The basics: obtaining a PhD from a university

A PhD is the gateway to an academic career. Information on the number of PhDs awarded at Dutch universities was first collected in 1920. There were 270 PhDs awarded that year, 25 of them to women – just under 10% of the total. It took until the mid-1980s before that figure rose consistently beyond 10% (between 1920 and 1985, it was 6.6%).

After 1985, the following trend emerged.

Percentage of women awarded PhDs by year 1985-2015



Data: [Download as csv](#) [2]

The trend is clear, rising from 8.8% in 1985 to near parity in 2015. There are major differences from one field of science to the next. The sharpest increases are in engineering and technology (from 2.5% to 28%), natural sciences (from 6% to 35%) and agricultural science (from 8% to 54%). Medical and health sciences awarded equal numbers of PhDs to men and women in 2006, and by 2016 women accounted for 62% of all PhDs in this field.

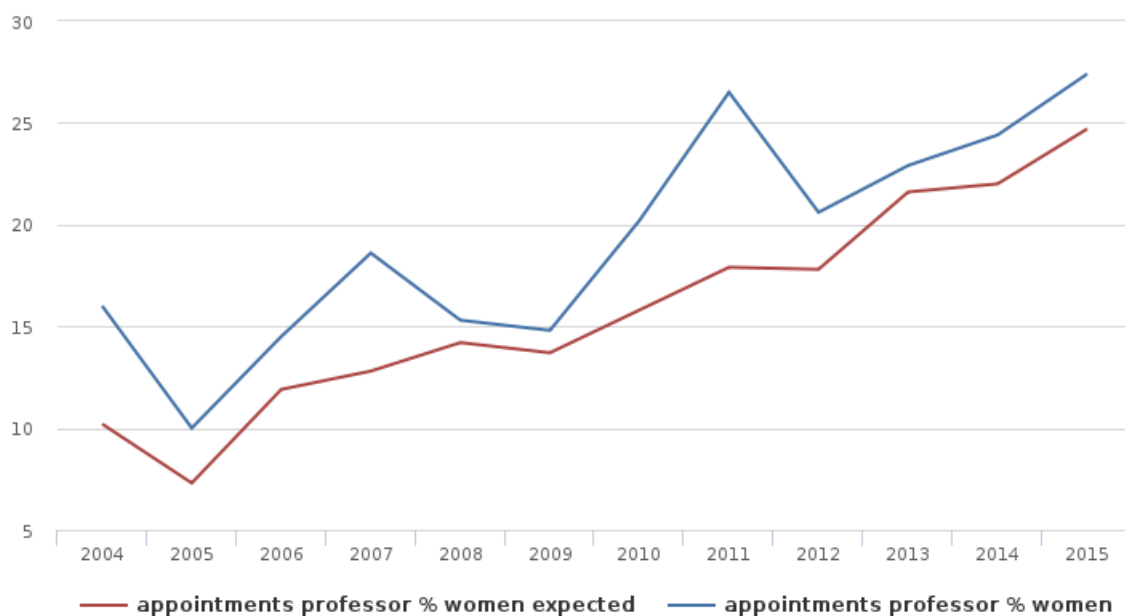
Analysis of new appointments by year

Our analyses show that the average age of candidates who have completed their PhD is 29.5, that assistant professors are an average of 37 years of age upon appointment, that the average age at which associate professors are granted an appointment is 42, and that professors are an average age of 49 when they take up their post (based on data taken from the WOPI University Staff Information System provided by VSNU Association of Universities in the Netherlands for the 2003-2015 period; no comparable data are available for university hospitals).

Policy meant to encourage more women in academia tends to zoom in on appointments and selection committees. That is why our analysis compares the male/female ratio of all newly appointed assistant, associate and full professors with the male/female ratio of PhD recipients 7, 12 and 19 years earlier. If careers are gender-neutral, then the ratio of male/female appointees in 2015 should parallel the ratio of male/female PhDs 19 years earlier, in 1996. But is that the case?

Universities name an average of 276 new professors every year. Of these, 52 are women (19%). If we compare appointments in the 2004-2015 period with our forecast (based on PhDs awarded 19 years earlier), we get the following.

Share of women appointed as professor compared with PhDs awarded 19 years earlier



Data: [Download as csv](#) [3]

This graph shows that the percentage of women appointed as professor is rising and somewhat higher than forecast. On average, nine more female professors are appointed each year than PhDs awarded in the past would lead us to expect. In the final year (2015), we see that women account for 27% of the appointments.

There are similar patterns for assistant and associate professors. The number of associate professors appointed each year is 292 on average, of which 87 are women (28%). Each year, seven more female associate professors are appointed than forecast based on PhDs awarded 12 years earlier.

An average of 285 women are appointed as assistant professors out of a total of 706 appointments each year (40%). That is 67 more female assistant professors each year than forecast. Male and female appointments to assistant professor have in fact reached parity (2015).

None of these figures include medicine, where the upward trend in number of female PhDs is much stronger, began much earlier, and achieved parity with male PhDs in 2006.

There are also differences from one field of science to the next. In the social sciences (including law and economics) and the natural sciences, we see that the forecast and actual, observed numbers are virtually the same. In the humanities, the scales are tipped in favour of women. Based on PhDs awarded within a twelve-year timeframe 19 years beforehand, the forecast is that 24.1% of all appointments to professorships would be women, whereas the actual figure is 26.7%. The biggest discrepancy is in engineering and technology: 6.1% of PhDs awarded to women versus 11.5% of professorial appointments going to women 19 years later. Information

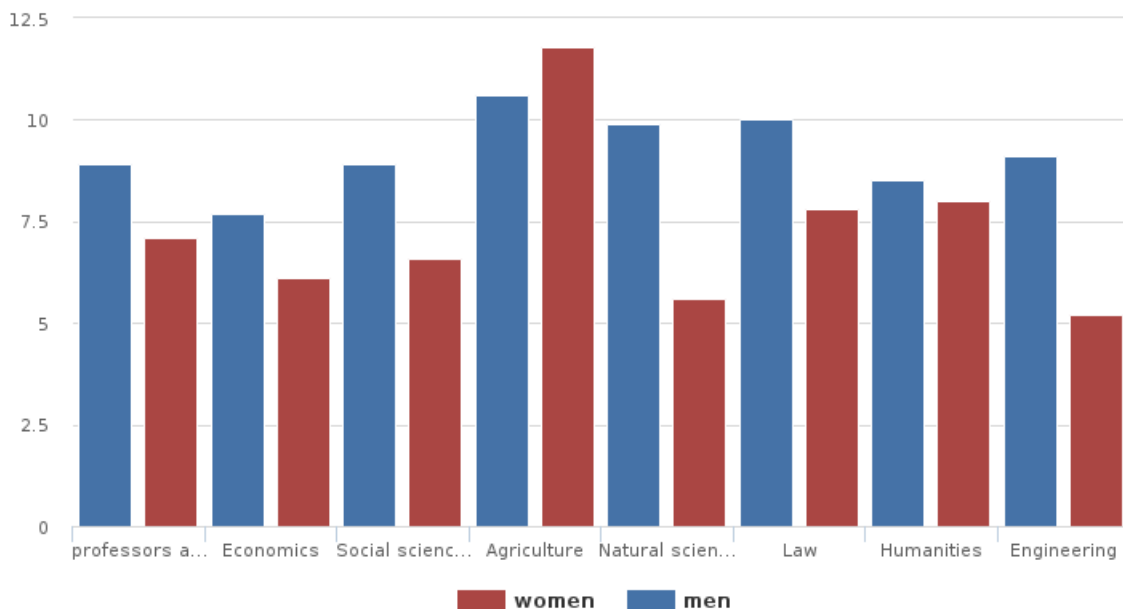
about trends in the number of female professors per field of science can be found in our [factsheet on Professors](#) [4].

Job tenure

On average, male professors were 49.1 years of age upon appointment in the 2003-2015 period. The average age at which male professors leave their position is 58, representing an average job tenure of 8.9 years. Both figures are lower for female professors. They are appointed at the age of 47 and leave when they reach an average age of 54.1. Their job tenure is 7.1 years, almost two years less than male professors.

We also performed our analysis per field of science.

Comparing job tenures per field of science: professors

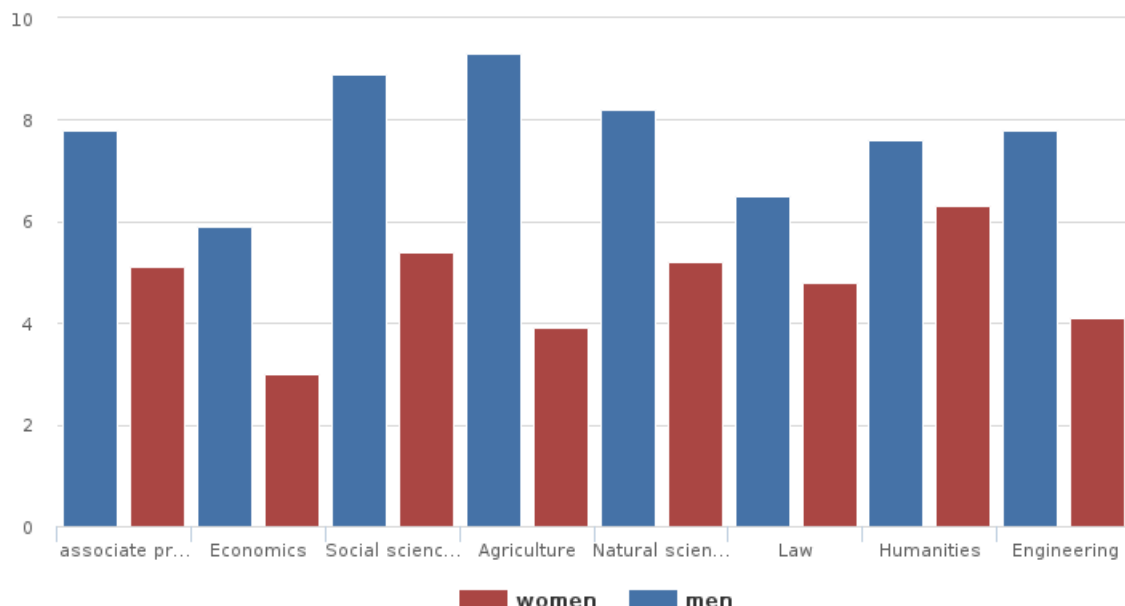


Data: [Download as csv](#) [5]

Among professors, the male/female job tenure gap is clear across virtually all fields of science (note: the figures pertaining to agriculture are based on a small number of female professors, i.e. fewer than ten individuals, and are therefore less reliable). Some fields of science exhibit a bigger gap than others. The largest are in engineering and technology and in the natural sciences, where the discrepancy between male and female job tenures is greatest.

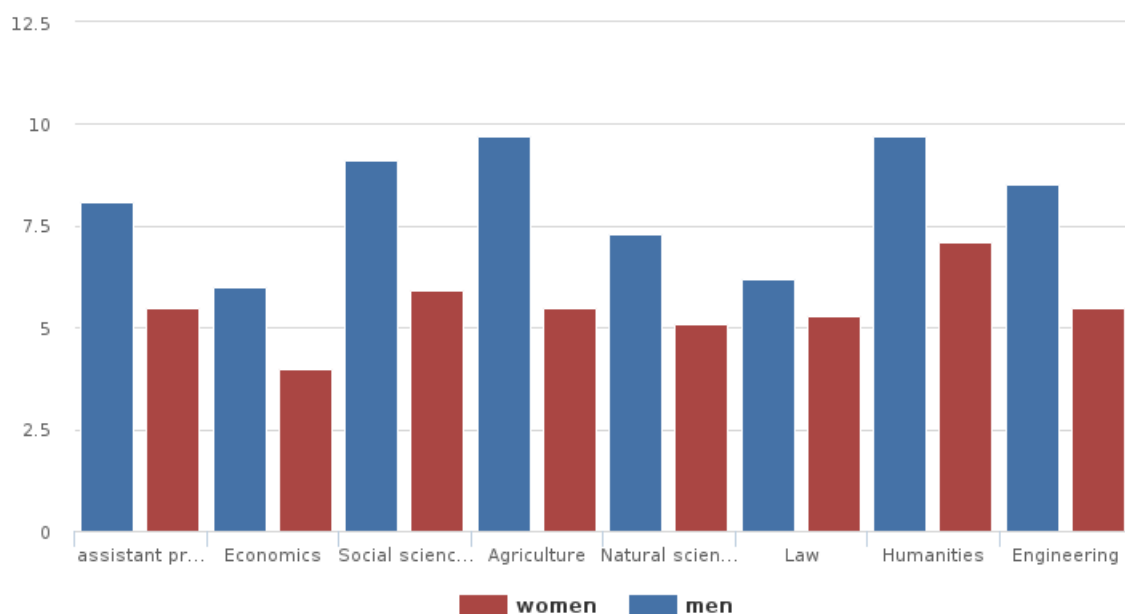
The male/female job tenure gap is larger among associate and assistant professors than among full professors. For associate professors, job tenure is 7.8 years for men and 5.1 years for women. For assistant professors, it is 8.1 years for men and 5.5 years for women. That is the case across all fields of science.

Comparing job tenures per field of science: associate professors



Data: [Download as csv](#) [6]

Comparing job tenures per field of science: assistant professors



Data: [Download as csv](#) [7]

About the data

Data on PhDs were obtained from Statistics Netherlands (CBS), which in turn obtained them from the individual universities where the PhDs were awarded. They are complete for all the disciplines. Data on number of new appointments were sourced from microdata in the universities' WOPI University Staff Information System, which VSNU Association of Universities in the Netherlands made available to the Rathenau Institute. These microdata date back to 2003. For this factsheet, we analysed the figures on an individual basis. We calculated the number of appointments made in a given year by comparing staff figures in two consecutive years. That was possible because the WOPI System contains unique personal IDs. However, that ID is used only within the relevant university. If an academic transfers from one university to another, the WOPI System registers this in the same way as someone who originated in another segment of the Dutch or foreign job market and has accepted an academic post with the university: he or she is assigned a new ID. The figures do not permit us to analyse the entire period for post-doctoral fellows, as this is not an identifiable staff category. No such data are available for academics working in the field of health (university hospitals). The few figures available on university hospitals concern the number of professors broken down by gender and institution for the years 2009, 2012 and 2015 (source: Stichting de Beauvoir/LNVH). Flow figures such as those based on the WOPI data are virtually non-existent for university hospitals. Data from Narcis (Gateway to Scholarly Information in the Netherlands) and DANS (Data Archiving and Networked Services) have been analysed. These data make it possible to analyse professors of medicine as a separate category. Unfortunately, these

sources only have data covering four years. Since the medical sciences were the first to achieve gender parity in number of PhDs awarded and since this field employs approximately a third of all academics in the Netherlands, patterns in this field (unknown to us) may have an impact on the overall figures. We are unable to perform a reliable analysis of new appointments in medicine compared with PhDs awarded 19 years earlier because the data do not include appointment figures for professors. The comparison also proved difficult in agriculture because the WOPI System classifies veterinary science under the field of health, whereas Statistics Netherlands classifies it under agriculture. This means that WOPI places veterinary science in a different data category than Statistics Netherlands.

Source URL: <https://www.rathenau.nl/en/page/women-academia>

Links

[1] <http://www.lnvh.nl/site/Publications/Monitor/Monitor-Vrouwelijke-Hoogleraren-2016>

[2] https://www.rathenau.nl/en/tablefield/export/node/1902/field_paragrafen/und/0

[3] https://www.rathenau.nl/en/tablefield/export/node/1902/field_paragrafen/und/2

[4] <https://www.rathenau.nl/en/page/professors>

[5] https://www.rathenau.nl/en/tablefield/export/node/1902/field_paragrafen/und/4

[6] https://www.rathenau.nl/en/tablefield/export/node/1902/field_paragrafen/und/6

[7] https://www.rathenau.nl/en/tablefield/export/node/1902/field_paragrafen/und/7