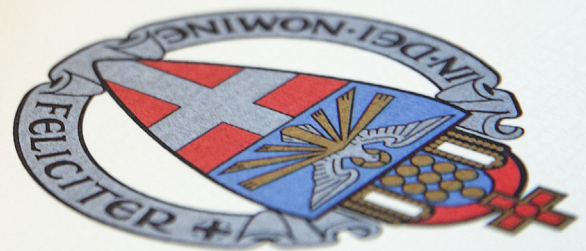


CAREER PATHS OF DONDERS PHD GRADUATES

Within the Donders Graduate School we aim to guide our graduates to become skilled academics who are equipped for a wide range of professions. To provide our future and current PhD candidates with a better overview of their career options we have analyzed the career paths of our alumni. Of all PhD graduates who published their thesis in de Donders Thesis Series we have determined their job title(s) and where they work 1 year, 5 years and 10 years after graduation. This data was gathered based on openly available information, such as LinkedIn profiles, personal webpages, current employer profile pages, CV's in the thesis, or based on information their supervisors provided.



Radboud Universiteit

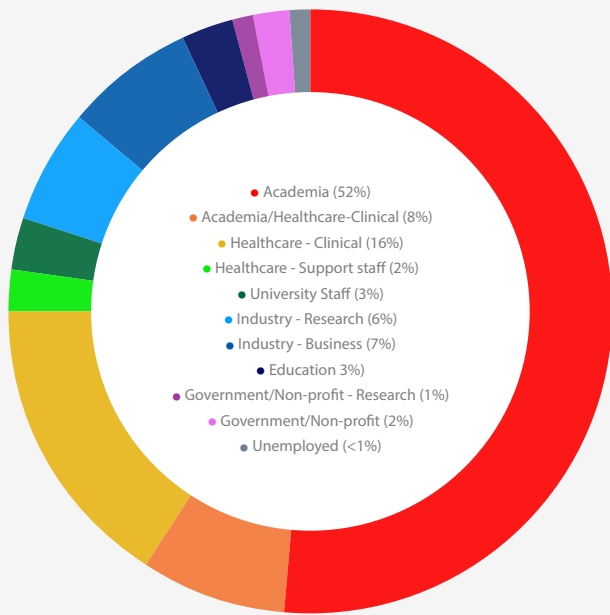


Radboudumc

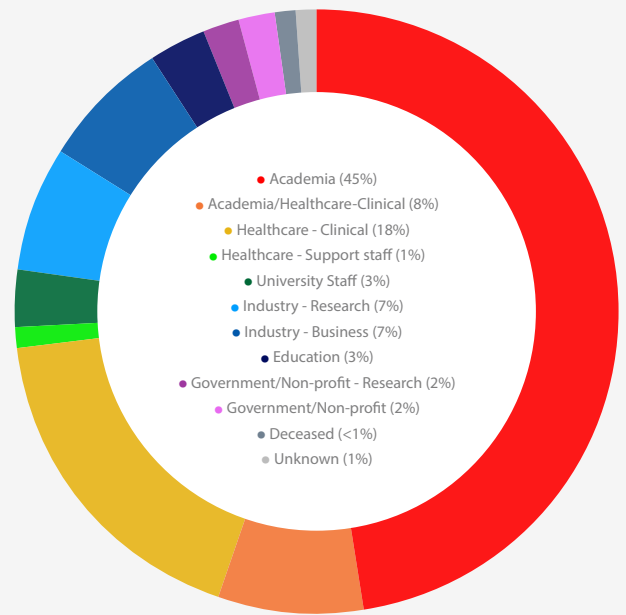
DONDERS
GRADUATE SCHOOL



1 year after graduation (n=527)



5 years after graduation (n=305)



10 years after graduation (n=103)

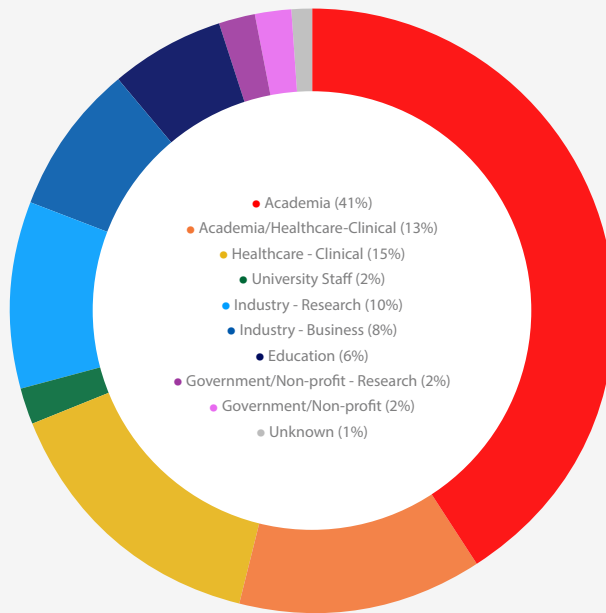


Figure 1. Donders PhD Graduates' careers after one, five or ten years after graduation, divided into different sectors.

General overview

Currently, 589 theses are included in the Donders Thesis Series, but only PhD candidates who graduated at least a year ago were included in this report. The majority of PhD graduates continued in Academia (see Figure 1). If we include the PhD graduates who combine academic research with clinical duties we reach 60% in Academia after 1 year, 56% after 5 years and 54% after 10 years. This is substantially more than the national average which is estimated at ~30% (see report Rathenau Institute).

In general most PhD candidates assume that once you leave Academia, it is not possible to return. To determine whether this was the case for our PhD graduates and look into whether they remain within the same sector, or switch between sectors, we

visualized the career paths of the PhD graduates. In Figure 2 you can see the number of PhD graduates per sector after 1, 5 and 10 years and whether they stayed within their initial sector. As expected, we see that the most prominent shift is from Academia to other sectors. However, there are also PhD graduates who return to Academia after 5 years, or even 10 years.

In addition, mobility from Industry to Non-Profit or vice-versa can also be observed. The most stable sectors appears to be Education and Healthcare – Clinical.

In the next sections we will go deeper into each sector and also in their job titles to see in what kind of positions our PhD graduates work.

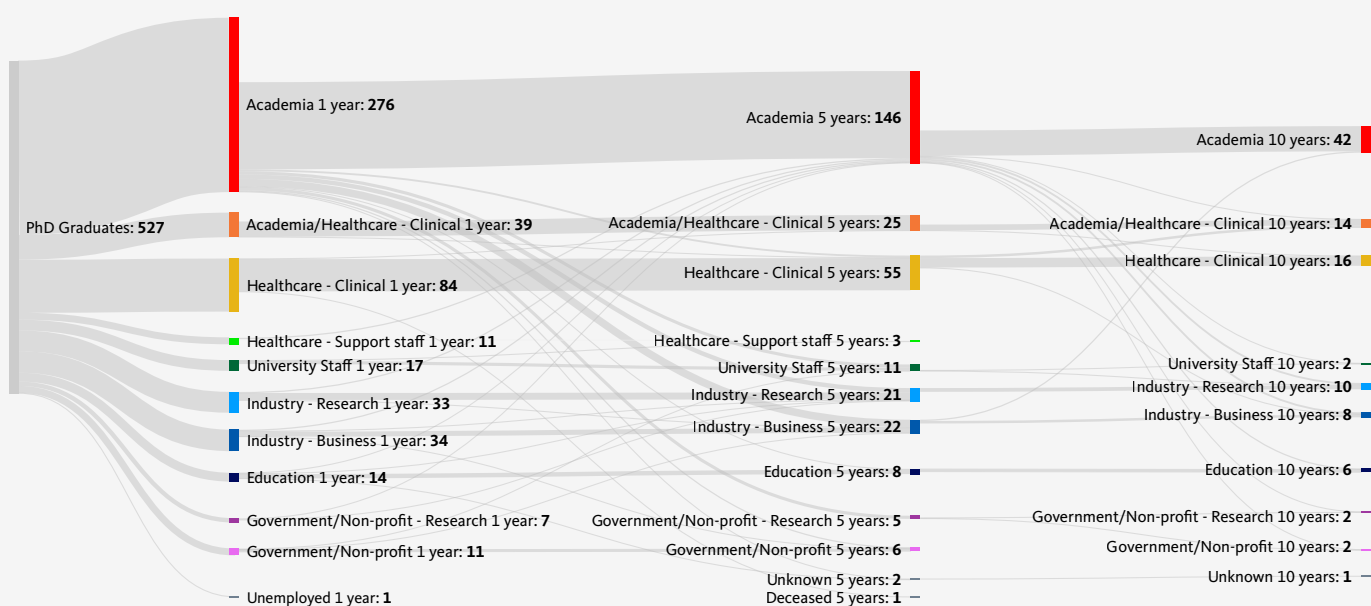


Figure 2. Donders PhD Graduates' careers after 1, 5 or 10 years after graduation, divided into different sectors. The numbers indicate how many PhD candidates are working in each sector and the lines show whether they switched between sectors, or remained in their initial sector.

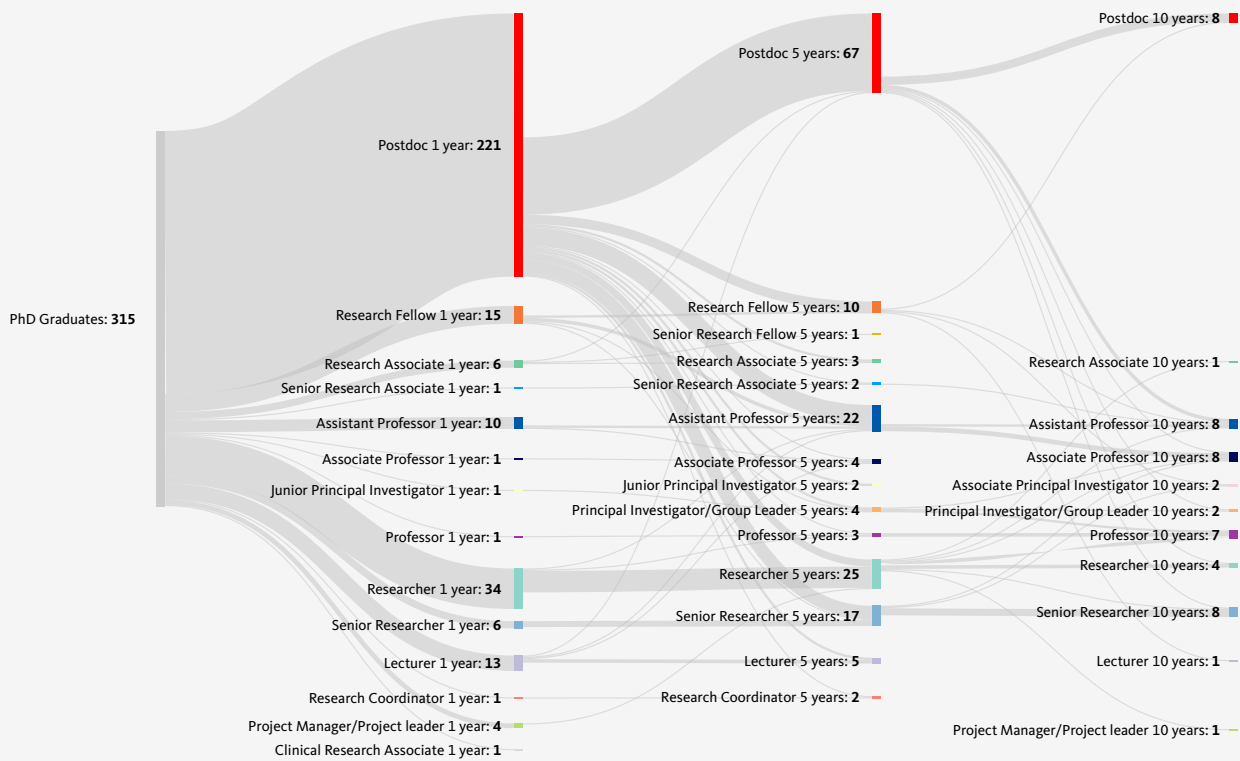


Figure 3. Donders PhD Graduates' careers within Academia

Careers in Academia

In Figure 3 we visualized the career paths within Academia. After 1 year the majority of graduates is working as a Postdoc. After 5 years there is still a large group of Postdocs, but also a growing group of Assistant Professors and already the number of Associate Professors, (j)PI's and Full Professors are growing. After 10 years there are still some Postdocs, but at that stage most people have reached more senior positions.

The PhD graduates who continue in Academia end up all over the world, but there are also a large number of PhD graduates who stay on campus 1 year after graduation. Most of them continue to work as Postdoc at the Donders Institute (64). There are also people who continue to work within the Radboudumc (38), the Radboud University (7) and the Max Planck Institute for Psycholinguistics (4). Although there are postdocs who transfer to other research institutes on campus (e.g. BSI, or RIMLS), most of our PhD graduates within the Radboudumc or RU are expected to still have an affiliation with the Donders Institute as well, but that information was not openly available at this time. In addition, 38 people continue their academic careers at academic institutions within the

Netherlands (e.g. Amsterdam (9), Utrecht (8), Leiden (6), or Twente (6)). Others work at healthcare institutions such as Karakter (2), Klimmendaal (1), or Vincent van Gogh (2).

A large group moves to institutions abroad, such as MPI Leipzig (7), University of Oxford (6), UC Berkely (4), University College London (4), New York University (3), University of California (3), EPFL Lausanne (2), Stanford University (2), Princeton University (2), Ghent University (2), Karolinska Institute (2), University of Pittsburg (2), ESI Frankfurt (2), MPI Frankfurt (2) and Peking University (2). Examples of institutions where one of our graduates end up include Yale School of Medicine, Columbia University, Boston University, Brown University, Ecole Normale Superieure Paris, Johns Hopkins University, King's College London, Medical University Vienna, Newcastle University, University of Parma, Rutgers University, Trinity College Dublin, University of Edinburgh, University of Glasgow, ETH Zürich, Université Paris-Sud, University of Düsseldorf, University of Madrid, University of Oslo, University of Stockholm, Uppsala University and York University.

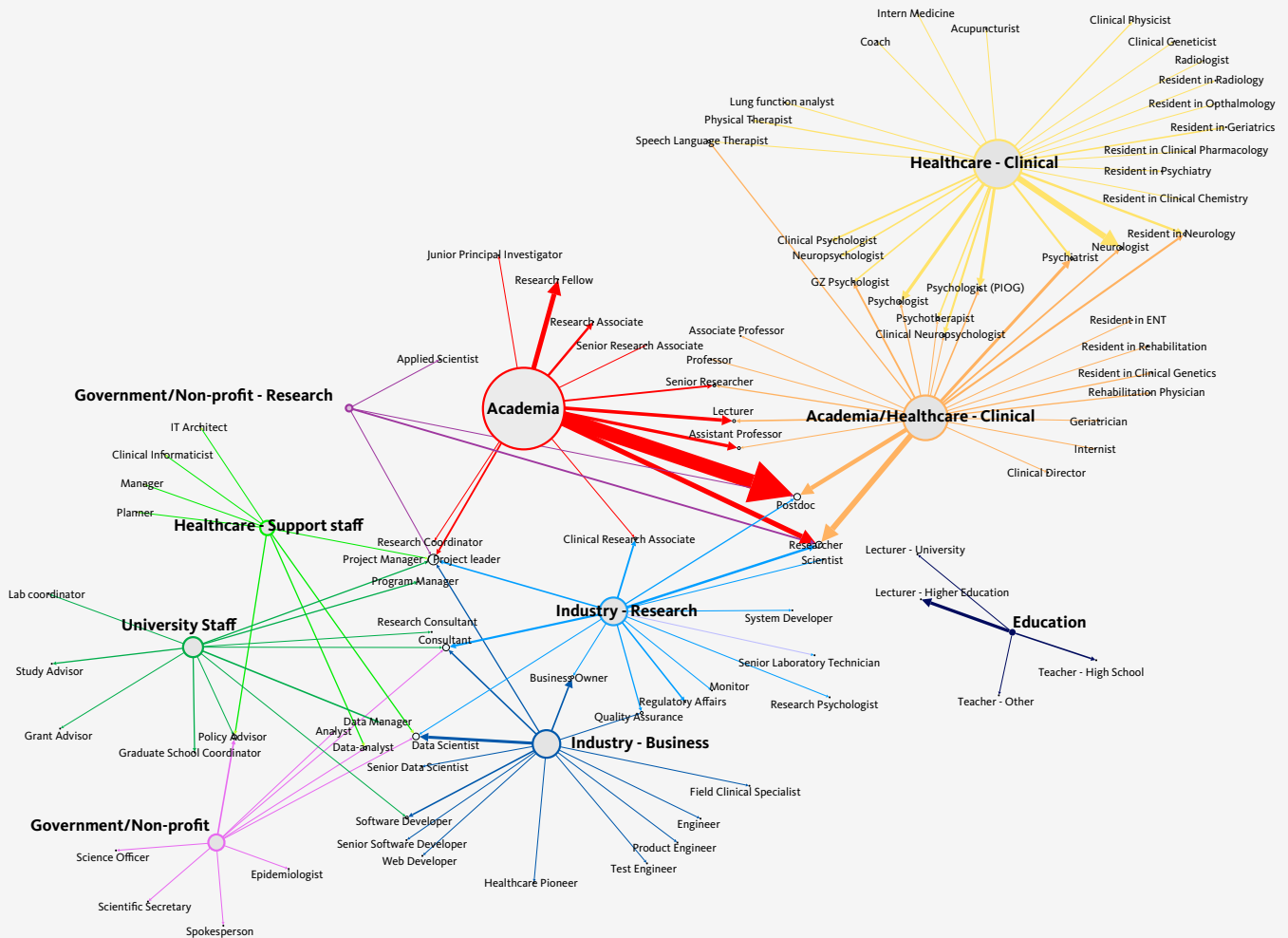


Figure 4. Job titles of all Donders PhD graduates 1 year after graduation, visualized per sector. The size of the circles and the thickness of the arrows indicate the number of PhD graduates. The circle of Academia and the arrow from Academia to Postdoc is not to scale for visualization purposes.

Careers outside Academia

Whereas most PhD candidates have a clear overview of the career option within Academia, they often are looking for more concrete options they can pursue outside Academia. Therefore we have analyzed the job titles of all PhD graduates after 1 year after graduation. This is visualized in **Figure 4**. Below we will discuss these results within the different sectors, as well as certain clusters that appeared. First we will discuss the sectors that are relatively isolated and then move on to the more interconnected ones.

HEALTHCARE - CLINICAL

The PhD graduates in this group all work in clinical settings and a large group does combine these clinical tasks with academic research (sector Academia/Healthcare - Clinical). Two large groups can be observed: 1. The Medical Doctors and 2. The Psychologists. The Medical Doctors are often in residency 1 year after graduation (23), or work as a Medical Specialist (44). Specialties cover Geriatrics, ENT, Ophthalmology, Rehabilitation, Clinical Genetics,

Internal Medicine, Radiology, Clinical Physics and Clinical Chemistry, but the largest group work either in Neurology (33) or Psychiatry (14). Most of these clinicians continue to work at the Radboudumc (37), but also other hospitals in the region are popular such as Maartenskliniek (3), CWZ (4) and Rijnstate (1) and a bit further away Catharina Ziekenhuis Eindhoven (2), Elisabeth-TweeSteden Ziekenhuis (2), and Jeroen Bosch ziekenhuis (2). Others end up at a wide range of academic and regional hospitals within the Netherlands.

The second group consists of Psychologists, also working in different specializations: Psychologists (11), Psychologists in training to become Healthcare (GZ) Psychologist (PIOG, 11), Healthcare (GZ) Psychologists (7), Clinical Neuropsychologist (6), Clinical Psychologist (4), and Psychotherapist (4). These Psychologists also work in a wide range of Healthcare Institutions, such as Vincent van Gogh voor GGZ (9), Karakter (4), Pro Persona (3). In addition, a couple of them have their own practice.

CLUSTERS ACROSS SECTORS

The analysis of the job titles reveals that certain jobs exist across sectors. Here we describe the clusters we identified in more detail.

CLUSTER 1 - RESEARCH

Figure 4 shows that not only in Academia PhD graduates work as a researcher. They also work as researchers (4), postdoc (1), or applied scientist (1) at Non-Profit or Government organizations, for example at the Dutch Institute for Forensic Psychiatry, CBS Statistics, TNO, IKNL, or Wetenschappelijk Onderzoek- en Documentatiecentrum (WODC).

Similarly, they work in Industry as researcher (6), postdoc (2), or scientist (1), for example at companies such as Screenpoint Medical, Imec and Oneplanet Research Center, Centogene, Nusantara Genetics, VAScage GmbH, and Mauro Usability Science.

CLUSTER 2 – CONSULTANCY

This cluster includes Consultants (10) and Research Consultants (1), with PhD graduates working in Universities, in Government or Non-Profit organizations, and in Industry. Examples of companies and organizations are Orikami, Hezelburcht Subsidieadviesbureau, DADA consultancy, Ordina, Helmholtz AI, Stichting Studiekeuze123, Moleman Psychopharmacology, Radboudumc en UMC Utrecht.

CLUSTER 3 – PROJECT MANAGER

This cluster includes Project Leaders or Project Managers (13), Research Coordinator (1), and Program Manager (2), with PhD graduates working in Academia, in Healthcare as Support Staff, in Government or Non-Profit organizations, and in Industry. Examples of companies and organizations are Philips, Artinis, Genmab, Orikami, DANS, Roer BV, Genmab, Karakter, Amphibia Ziekenhuis, Saxion, and multiple academic organizations

CLUSTER 4 – DATA SCIENCE

This cluster includes Data Scientists (12), Senior Data Scientist (1), Data Analyst (3), Analyst (1), and Data Manager (3), with PhD graduates working in Universities, in Healthcare Organizations, in Government or Non-Profit organizations, and in Industry. Examples of companies and organizations are BigData Republic, Sogeti, Cegaka, SFK group, Vantage AI, Nostos Genomics, Achmea, Zilveren Kruis, Inspectie Gezondheidszorg en Jeugd, Qlip BV, TenneT, Inspectie van het Onderwijs, iToday and Mediq.

Conclusion

We were able to trace the careers of almost all of our alumni. Compared to the national average substantially more PhD graduates continue in Academia. In addition, with this report we intend to give more insight in the possibilities outside of Academia. Outside Academia many PhD graduates still work in research

EDUCATION

The PhD graduates in this sector work in different educational settings, from being a lecturer in Higher Education (Universities of Applied Sciences/Hogeschole, 9), a teacher in High School (3), to teaching Dutch as second language (NT2 teacher, 1).

UNIVERSITY STAFF

Some of the positions have already been described in the clusters above, but additionally PhD graduates work as Support Staff in Universities in positions such as Graduate School Coordinators (2), Study Advisors (2), Policy Advisor (1), Grant Advisor (1), or Lab Manager (1). Most PhD Graduates in this sector stay on campus at the Donders Institute (4), Radboudumc (2), Radboud University (2), or MPI (2).

HEALTHCARE - SUPPORT STAFF

Similar as for the University Staff many of the positions in this sector have already been described in the clusters above. In general PhD graduates in this sector work in Healthcare Organizations or Health Insurance companies, supporting IT processes, planning, management, policy development, project management or data analyses.

GOVERNMENT/NON-PROFIT

In addition to the clusters above, PhD graduates in this sector work as Policy Advisor (3), Epidemiologist (1), Science Officer (1), or Spokesperson (1), at institutions such as NWO, Dutch Health Care Authority (NZa), or municipalities.

INDUSTRY

PhD graduates in this sector work in a wide range of positions and companies. On top of the careers described in the clusters, there are the Software, System, and Web Developers (6), Engineers (3), people working in Regulatory Affairs or Quality Assurance (7), or Clinical Research Associates (4). Companies include Moleman Psychopharmacology BV, Cebir, Philips, PPD, STARoDUB, ASML, Novartis, Lionbridge, AirRTLS, Eaglescience Software BV, Yeast, Edwards Lifesciences, Mosadex E-Health, Cikautxo, Oticon, Charles River Laboratories, and SeqBiome. Furthermore, 9 PhD graduates started their own business, ranging from owning a restaurant or art gallery to spin-offs of academic research.

related positions or sectors, but others have chosen alternative career paths as well. As such, the career paths of Donders PhD graduates span a large range of sectors and professions, but the common factor is that they almost all have become successful professionals.