



## ***Bridging the gap***

## **Preparing PhDs for a work life outside universities**

Recommendations to ministries, universities,  
PhD students and other actors



# Preface

The University of Copenhagen Association of PhD Students (UCAPS) held a conference on January 31, 2019 about the future of the Danish PhD Education. The conference was organised in collaboration with the PhD Association Network of Denmark (PAND) and the PhD Association of the University of Southern Denmark (PAUSD), and was supported by the Carlsberg Foundation.

This event focused on how to improve the transition from being a PhD student to having a work life outside academia, and in this report we present our recommendations in that regard. Some recommendations are rather straightforward to implement, while others may require a change of culture or the combined efforts of different actors. Most of the recommendations are rooted in the discussions and presentations that took place at the conference, and this policy report is formulated by representatives from UCAPS, PAND and PAUSD - and supported by all PhD associations in Denmark. The policy report takes into consideration the conference inputs, our knowledge from engaging with PhD students across the country, and recent reports and analyses from other actors.

We thank all the presenters and participants at the conference for valuable input to the present report.

[Programme and invitation to the conference](#)

[Presentations from the conference](#)

# Background

Two concerns led to the organisation of the aforementioned conference: a general concern about job prospects within universities, especially expressed by PhD students during UCAPS's inaugural assembly in March 2018, and the experience that universities do not facilitate a smooth transition to the non-academic labour market. The conclusions drawn from that event have confirmed that there is indeed a need for changes, and have pointed to both issues and possible solutions. Interestingly, the topic seems to occupy many other actors at the moment, where a range of reports<sup>1</sup> and debate articles<sup>2</sup> focus on the problem of 'bridging the gap' between academia and the labour market outside universities. The occupation rate is rather high for PhD graduates. Yet, it is uncertain whether the PhD graduates actually make use of the competences they have acquired throughout the PhD education in the positions they occupy.

An issue of concern is that too many PhD graduates linger in the university system, trying to qualify for tenure with long periods of fixed-term positions, for example as postdoc or research assistant. This creates much uncertainty and instability in the career paths of young scholars. A recently published report from the Danish Council for Research and Innovation Policy has shown that the period of time from PhD award until tenure has increased by about two years since around the turn of the millennium.<sup>3</sup> There is simply not enough room for all the PhD graduates (and postdocs) educated at university to access a

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<sup>1</sup> "Karrierer i forskning", The Danish Council for Research and Innovation Policy, 2019:  
<https://ufm.dk/publikationer/2019/karrierer-i-forskningen>

<sup>2</sup> "Hvem skal oplyse om karriereveje i erhvervslivet", Altinget, March 19th, 2019:  
<https://www.altinget.dk/forskning/artikel/afslutning-paa-debat-hvem-skal-oplyse-om-karriereveje-i-erhvervs-livet>; "Forskningsråd vil rydde op i "postdoc sumpen"", Altinget, January 22nd 2019:  
<https://www.altinget.dk/forskning/artikel/dfir-vil-tidsbegrænse-postdoc-ansættelser-for-at-undgå-sumpen>

<sup>3</sup> "Karrierer i forskning", The Danish Council for Research and Innovation Policy, 2019:  
<https://ufm.dk/publikationer/2019/karrierer-i-forskningen>

tenured position in academia, and most will go into industry or to other organisations or companies outside universities.

However, the PhD education, as well as other framework conditions, does not seem to have adjusted to this development. There was a time when the most natural place to go after the PhD education was a permanent position in a university, teaching and researching. Those times are long gone. There is therefore a need to rethink not only how PhD students can become better equipped to get a job outside universities, but also to improve how they engage with society and create value beyond the academic world.

It is important to note that a more fluid interaction between academia and society provides value not only to the individual PhD, but also to the organisations and companies benefitting from the knowledge and skills that a PhD brings to the table. Furthermore, there is an added value for the university as a whole, since a better interaction with the outside world will benefit the fulfillment of the third mission of universities: dissemination of knowledge.

Finally, it is the experience of many PhD students that current services, initiatives and overall conditions are not good enough in bridging the gap between academia and work life outside universities. There is clearly room for improvement.

Overall, we identify two main challenges that need to be overcome if we are to help PhD graduates transition from the university, or other higher education institutions, into jobs outside academia.

## Challenge 1: Need for cultural change

There is a need for all actors, especially within universities, to recognise that most PhD graduates will enter into a career outside universities. This requires that PhD students, supervisors, university managers and administrators, companies and other organisations revisit the idea of what a PhD is, what a PhD student should learn, and how a PhD may and should contribute to both the university and society.

PhD students have the duty to disseminate knowledge, as is clearly set out in the PhD act (Ph.d.-bekendtgørelsen). Acknowledging this as a central duty, by establishing proper incentives, structures and changing cultural practices, is one step toward facilitating the transition to work outside universities. Furthermore, supervisors in some fields show little understanding for the interest of their PhD students to pursue activities during their education that are more targeted at acquiring transferable skills for a career outside universities than at activities relating directly to their research project. This lack of understanding does not facilitate the interaction of PhD students with actors outside universities.

## Challenge 2: Unclear responsibility for PhD careers

PhD students often experience that the placement of responsibilities for career guidance in universities is unclear. Some reside within the PhD schools, some within the department or PhD programme, and some lay on the individual supervisor of the PhD student. Furthermore, there seems to be unequal access to services and career counseling across universities as well as faculties and departments within universities.

# Recommendations

*Recommendations are divided according to target group:*

**1. For Parliament, the Ministry of Higher Education and Science and others in the Danish research and innovation system**

**3. For universities and faculties**

**3. For individual PhD students**

# **1. For the Parliament, Ministry of Higher Education and Science and other actors in the Danish research and innovation system we recommend that**

Mobility between industry and academia is promoted. Including people with experience from outside academia among the faculty of a university would help in two ways: it will decrease the uncertainty related to moving out of academia, and it will open academia to role models with experience outside universities. These two effects would reinforce one another, as more people transition between academia and industry. The universities can probably not promote this transition alone. The Ministry should consider ways to promote mobility between sectors, e.g. by giving incentives to hire researchers at universities with industrial experience. Private and public funders of research and innovation could also contemplate ways of promoting mobility, e.g. by introducing new kinds of fellowships or grants.

**The proportion of people employed in academic positions in the Danish universities that comes from outside the university sector is on average 1.6 %. This shows very clearly that there is a problem with few university employed academics with experiences from industry.**

Source: "Videnskabeligt personales karriereveje", DAMVAD Analytics for The Danish Council for Research and Innovation Policy,, 2018



The Ministry as well as private and public funders of research take action to reduce the so-called postdoc swamp, i.e. the abundance of long-period postdocs, with no prospective of tenure, which creates a precarious existence for young researchers. An increased use of tenure-track assistant professorships is one way to reduce the uncertainty for PhD students and postdocs. Another way is to consider how public and private councils and foundations fund research. It should be discussed whether it is necessary to reduce the number of postdoc positions included in collaborative research grants, and focus instead on funding senior researchers' time as well as PhD positions. While a scenario with more PhD students and fewer postdocs would obviously lead to more competition for research positions within universities, it will make clearer, at an early stage, what career paths a PhD student should choose. This will be an improvement for both PhD students and for society as clarification of career path may promote a more focused development of skills and competences.

## 2. For the universities

The recommendations in this section are targeted at the universities and faculties at the universities. Thus, they are recommendations on a structural level that have direct impact on each individual PhD student. The recommendations are as follows:

### **Equal access to career guidance**

We recommend that the universities, faculties and departments ensure that career guidance is accessible to all PhD students. Importantly, this career guidance service should be targeted towards their specific field of research. The present status is that the availability and quality of career guidance depends on what each faculty or department considers a priority to offer to PhD students. This practise leads to unequal, institution-dependent access. We recommend that universities work to ensure structures for basic career guidance while leaving room for subject-specific offers.

### **We recommend that:**

- PhD schools and career centres interact to share and develop best practices for career guidance of PhD students. At the conference we learned from actors in the field that PhD schools and career centers do not work coordinately. Better interaction may both improve learning and support streamlining offers to PhD students, thus mitigating unequal access to support.

- PhD schools and career centres target the career guidance towards the subject area of the PhD students. One of the conclusions drawn at the conference is that PhD Schools and career centres do not have much industry-specific knowledge. This is a challenge, as this lack of knowledge makes it difficult for them to target counselling to the issues and opportunities in the sectors where PhD graduates will get jobs after the PhD.
- University administration and PhD schools prioritise the advertising of career guidance and services to ensure that PhD students are informed of the possibilities of receiving support. While PhD students have an obligation to find offers themselves, the PhD schools could also improve the communication of job opportunities, e.g. through welcome or information packages that all PhD students receive when they begin their education.

## **Streamlining and improving career guidance services**

Universities, faculties and departments offer an array of different services, such as mentorship programs and coaching for PhD students. However, those services are often not structured and uniformly offered across universities. We therefore recommend that universities create platforms to secure the streamlining of services across universities, faculties and departments, making certain that all PhD students are offered reliable career guidance.

### **We recommend that:**

- Mentorship programs are established across universities, faculties and departments. Some universities offer mentorship programs for PhD students, others do not, leaving the access to mentorship programs depending on the specific university, faculty and department. We recommend to streamline the service and make it available to all PhD students.
- An industrial co-supervisor could be associated with each PhD project. For industrial PhDs this is already a requirement. Associating a co-supervisor who represents the industry would strengthen relations between academia and industry and provide the PhD student with a role model and a network outside academia.
- Employer panels are hosted at universities. Employer panels are used at master's degree level and could be beneficial on a PhD level to introduce the skills of PhD

students to potential employers, and to give input from employers to university leaders about possible improvements of the education. As an example of such initiative, the Department of Political Science at the University of Copenhagen hosts a PhD and postdoc employer panel, which runs on two parallel tracks. On one side PhD students and postdocs meet potential employers and exchange ideas about what they should do to improve their chances of being hired, while employers become informed on how PhD students and postdocs can contribute to their business. On the other track, university leaders and employers meet to exchange ideas about bettering post-graduate education. We recommend similar initiatives take place in all universities.

- Career courses are formulated to support each PhD student in clarifying skills, competences and motivation. The course could be led by a certified career coach who has knowledge about PhD education and insight into careers for highly trained workers.
- Problem-solving workshops with potential employers are run. These workshops would bring the competences and skills of PhD students to the arena of the issues commonly faced by industry. Encouraging PhD students to seek specific solutions for such problems would help them visualise a career outside academia. As an example of this practice, the Faculty of Social Sciences at the University of Copenhagen does run such a course, during which the PhD students work on real-life problems over the course of a few days, coming up with potential solutions to be presented to the employers.
- Continuous career coaching is ensured. Early career planning and recurrent events about career development should be made available to all PhD students to guide their decisions about work life after their PhD degree. This also entails making it mandatory to discuss prospects of jobs outside academia at the PhD students' staff development interviews (MUS).
- Faculty- or department-specific career days take place, targeted at the subject area of the PhD students. This should be a combination of pitches from both PhD students and companies, supporting the visualisation of the potential contribution of PhD students to the non-academic labour market. Career days for PhD students could be arranged as part of career days for master and bachelor students, by means of some sessions dedicated specifically to PhD students. As a source of inspiration in this regard, the University of Bath hosts an initiative called 'Images of research'. This yearly contest engages PhD students into making a short pitch, along with an image, to present their research in an accessible way. This serves two purposes: training PhD students in research communication, and introducing the attending employers to the skills, competences and knowledge of future PhD graduates, i.e. potential employees.

## **Changing practices in academic culture**

As emphasised in the introduction, one of the challenges related to improving the transition from PhD life to work life outside universities is a need for cultural change in academia. In this section we will scrutinise which cultural practices in this regard should be revised.

### **We recommend that:**

- Supervisors take an active role, if the PhD student expresses interest, in guiding PhD students toward a career outside academia. At the conference, we heard accounts of instances where supervisors hamper the development of relevant experience for a job outside academia. This would typically occur by preventing PhD students from taking relevant courses for their career development if such training is not considered directly beneficial to their research project. Supervisors should be better equipped, regarding both mindset and skills, to give advice and, in general, facilitate the transition to a work life outside academia. A cultural change is needed in this regard as supervisors must consider the fact that they not only educate researchers, but also future employees in industry and other organisations.
- PhD programmes value and reward dissemination of knowledge to a larger degree. Little incentive is given during the PhD education to contribute to the third mission of universities: creating research-based societal impact through dissemination and outreach. Writing newspaper articles, giving talks to non-academic audiences, consulting for organisations or companies, developing spin-out companies, etc. should be acknowledged and considered as a part of the PhD education. This could be done in two ways: by granting ECTS points for such activities, or by including them within the 840-hour PhD duty work. The current legal framework does in fact contemplate this vision of PhD programmes, but unfortunately cultural practices in academia tend to overlook this point.

- Universities embrace mobility between industry and academia. This is also mentioned as a recommendation to the Ministry of Higher Education and Science. But to make a change, it is pivotal that universities fulfill their part of the obligation. The scarcity of faculty members with non-academic work experience owes to several reasons, one being that it is hard to maintain a competitive CV, in terms of publications, if one has been employed for years in the private sector. Therefore, CV requirements should be revised. It is also important that criteria in job advertisements are directed towards potential applicants from outside universities. Another possibility is creating more positions that are targeted specifically at attracting employees from outside universities.
- PhD programmes include the possibility of internships. The current legal framework includes a period of change of environment as mandatory during the PhD education. But also ‘other similar activities’ are contemplated under the PhD Act. We suggest that internships in companies or other non-academic organisations are promoted as alternatives, or in addition, to purely academic changes of environment. These internships should of course be recognised, potentially by awarding their value of ECTS, or by being part of the 840-hour PhD work obligation. The latter is an important element since internships should not increase the overall workload for PhD students who, according to multiple surveys on working conditions of PhD students, are already experiencing to be overburdened with different kinds of tasks during the PhD, having a negative impact on their mental wellbeing<sup>4</sup>.

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<sup>4</sup> E.g. Levecque, K. et al (2017) *Work organization and mental health problems in PhD students* and The Stanford Daily ‘*A toxic culture of overwork*’: *Inside the graduate student mental health crisis*, March 13th 2019

### 3. For the PhD students

Scientific research has, or has the potential for significant impact on our society. For this reason, researchers, including PhD students, must understand their role in society and their contribution to it. Too often the academic culture results in PhD students being too focused on the research itself, having no experience in explaining the impact of their research to society. Furthermore, since most PhD students will get a career outside universities, according to the DFIR report, it is beneficial for each PhD student to consider relations to actors outside universities.

#### **We recommend that:**

- PhD students establish their own network early on. This can be done in a variety of ways but would usually begin with building on one's existing network. Other options include going to industry/policy related conferences, contacting labour organisations that work with small and medium-sized companies (SMEs), participating in industry-specific career fairs, asking for “coffee dates” with potentially interesting companies or organisations, etc.. PhD students should consider using and expanding their current network, but they should not rely exclusively on their supervisor’s network.
- PhD students learn how to explain their research to society, private businesses and the research community at large. As pointed out at the conference, communication barriers often hinder the transfer of knowledge from academic environments to the outside world. It is therefore crucial that young researchers learn how to convey the relevance and content of their work in an accessible, target-specific manner. Some universities host communication workshops to help improve these skills. Alternatively communication competitions, e.g. the PhD Cup, or the proposed ‘Images of research’ contest (University of Bath) may offer such training. Disseminating research by

writing newspaper articles or using other popular science outlets may also support the practice of communicating research to a broader audience.

- PhD students actively seek specific help or mentorship. If needed to pursue a specific career path, PhD students could contact labour organisations and professionals in their particular field. Mentorship programmes are sometimes available through university, but similar programmes can be found elsewhere, such as in labour organisations (e.g. DJØF).
- PhD students research and listen to the needs of the industry. This exposure to the challenges present outside academia can be done in multiple ways: participating in company visits, doing internships (provided that this is made possible), or consulting for organisations or businesses during the PhD education. It is allowed to do consultancy, and get paid for the services, during the PhD education.
- PhD students make efforts to understand and clarify their skills, transferable skills and personal goals. For that purpose, apart from their personal reflection exercises, they can make use of the career counseling services at university, if available. Additionally they may take part in career planning courses that might be offered to them at university.



## **How will these recommendations help?**

The recommendations presented in this report point to both cultural, structural and personal challenges that need to be addressed to facilitate a transition from the university to work life outside academia. Some challenges are easier to address; others require a joint and continuous effort, e.g. addressing cultural issues. A question is also if new responsibilities, tasks and options might actually be helpful for PhD students, as many of them already experience feelings of being overburdened.

However, the recommendations mainly point to structural changes that do not put more workload on the individual PhD student, but instead require efforts from the universities and other actors, or they are ideas for offers that are not mandatory. Furthermore, some of the more time consuming options we suggest, like internships and communicating your research, we also propose yield ECTS points or are integrated into the 840 hours work obligation.

With these recommendations we reach out to the Ministry of Higher Education and Science, the universities and other actors who influence the framework conditions for Danish PhDs. It is our hope that you will engage with us, and local PhD students and PhD association in order to implement the changes proposed in this report. Obviously, some changes proposed are more important in some scientific areas or universities than others. And some will find that they already are doing several of the things we recommend. However, there should be relevant recommendations for all actors who wishes to make a difference for the Danish PhDs, to the benefit of society at large.