WILL I FIND A JOB AS A SCIENTIST?

By Sven Hendrix

Young researchers are often disoriented what they should do with their PhD and whether they will find a job after their doctorate. The good news is that the unemployment rate of PhD holders is surprisingly low. The bad news is that young scientists often do not work in the field they have expected. They may even feel overqualified in their first job, but with increasing experience, most scientists may find a fulfilling calling.

Will I be unemployed and homeless?

Young researchers in the late phase of their PhD or close to the end of their postdoc contract often get nervous and may even panic because they have no clear vision of which job they want, where to look for job opportunities. They usually start screening online job boards several times daily and may become increasingly frustrated.

Unfortunately, for methodological reasons, most available studies refer to rather old datasets. However, a very instructive source of information about scientific careers is the Careers of Doctorate Holders Survey 2010 by ECOOM which carefully analyzed the academic job market in Belgium. This report stated that doctorate holders are less confronted with unemployment compared to other groups on the labor market. **Only 2.5% of doctorate holders** who responded in the survey were **unemployed compared to an average unemployment rate in Belgium at 7.3 %** (Eurostat, 2012).

This analysis also showed that three years after a doctorate, about 30% of students in natural sciences, engineering & technology, medical & health sciences, and agricultural sciences still work in academia – mostly as postdocs. In social sciences and humanities, a whopping 50% were still in academia.

What are the expectations of young scientists?

In the Nature 2017 PhD survey of more than 5,700 early-career scientists worldwide, about **75% of all responding young scientists *before graduation*** reported that **it's likely that they will pursue an academic career** when they graduate! In a survey, we performed in Belgium (Belgian Postdoc Survey 2012), we received feedback from 413 *postdoctoral* researchers from all scientific domains at Belgian universities. **Nearly 80% of all postdocs hope to pursue a career in academia.**

Where do PhD holders find a job?

To find orientation, it is crucial to get an idea where other scientists found a job. Older data from the Flemish Council for Science and Innovation (VRWB) suggest that about **1/3 of all PhD holders do a postdoc while 2/3 directly start a non-academic career** in the public sector, NGOs, industry or teaching. About 18% of the postdocs pursue an academic career. Nearly half of them become permanent academic staff in the academic administration, for example, the staff of a doctoral school or a tech transfer office. **Only 3-5% of all PhD holders become professors.** Read more

here: Should I become a professor? Success rate 3 %! This also means that more than **80% of all postdocs join the non-academic job market (public sector, NGOs, industry or teaching)**. Therefore, it is crucial for all scientists to carefully reflect and analyze whether doing a postdoc is a useful experience and a valuable career step.

Will a postdoc increase or decrease my market value?

This is a complex question. The answer depends largely on your career goals. If you want to **become a professor**, a **postdoc** period of about 2-6 years is **probably unavoidable**. Read more here: For how long should I be a postdoc? However, if you envision a **career *outside* of academia** (public sector, industry, policy, politics, NGOs, teaching …), **a postdoc may even be counterproductive.**

Beryl Lieff Benderly analyzed in a thoughtful essay the US-American 2014 National Academies report. She pointed out that, according to the report, an

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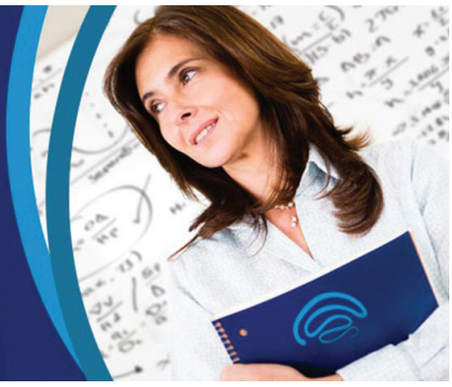

increasing number of postdocs pursued non-academic that do not require the expertise gained during multiple postdoc years. Besides, postdocs may make **sacrifices in salary**. However, when they take a non-academic job later, they **start with a lower wage** less than contemporaries who took jobs right after their PhDs, and their incomes never catch up. **In other words, you may earn less during your postdoc period *and* earn less when taking a non-academic job later** compared to a colleague who started working immediately after finishing his/her PhD. As a reminder: more than 80% of all postdocs join the non-academic job market.

Of course, **salary is only one element to consider when choosing a career**. Scientists often find meaning, fulfillment, curiosity, or continuous learning more important than a good salary. However, if you make clever decisions, you can have both – a fulfilling job and a good salary.

A Postdoc Is Not Your Only Career Option

Based on the considerations above that more than 90% of all PhD graduates find a job *outside* academia, it may be a smart move to consider alternatives to a postdoc.

Arunodoy Sur wrote an instructive post about **the misleading idea that a postdoc is your only career option after your PhD.** He claims that **most PhDs transition into an academic postdoc, even when they would rather transition into an industry position** because the entire academic system has led them to believe that there is no other choice. In his post, he gives 10 examples of **top non-academic careers you may consider applying for, such as** market research analyst, business development manager or medical communication specialist. He also points out **that "there are several jobs available to you and other PhDs outside of academia**. You do not have to do a postdoc or continue doing a postdoc. The key is that you must work to change your situation. To secure your ideal industry position, **you must prepare yourself by gathering as much information about alternative career options for science graduates as possible.** You must also begin to grow your non-academic network. Only then will you be able to transition into the non-academic career of your choice."

Flexible working: Science in the gig economy

Another possibility to find jobs is the gig economy. Roberta Kwok pointed out in a naturejobs article in 2017 that the global gig economy has influenced industries from taxi driving to software engineering via websites and apps such as Uber, TaskRabbit, and Upwork. Similarly, people with scientific training may prefer (or are forced) to sell short-term services to many clients rather than holding down single full-time jobs. They offer services on sites such as Upwork or finding projects through their previous academic networks. She also reported that about **3,200 freelancers (2017), most with backgrounds in the life or physical sciences, sell services such as statistical review and literature searches through the online platform Kolabtree.com**. She also mentioned that researchers have always taken on jobs with limited timeframes, such as postdocs and adjunct teaching; however, many of the projects completed through gig-economy platforms are shorter and performed remotely.

The advantages are clear – you have much more flexibility, no boss who pushes you around, you can focus on the activities you enjoy and which bring the most income, and you can learn a lot of useful skills. On the downside, you have no financial security, clients can be demanding and your long-term career possibilities may not be bright.

Conclusions

In conclusion, your chances of finding a job as a scientist are excellent compared to the general population. However, your expectations may be unrealistic, positions in academia are limited, and most PhD holders work outside academia. A postdoc seems attractive and may appear as the only career option, but there are multiple job alternatives for a postdoc. Furthermore, you may consider short-term jobs via gig-economy platforms with all advantages and disadvantages. Thus, it is of critical importance to get a crystal-clear idea of what kind of career you want to pursue.

Interesting links

Nature's 2017 PhD survey

https://www.nature.com/naturejobs/science/articles/10.1038/nj7677-549a

Comment on Nature's 2017 PhD survey

https://www.nature.com/news/many-junior-scientists-need-to-take-a-hard-look-at-their-job-prospects-1.22879

Beryl Lieff Benderly

https://www.sciencemag.org/careers/2015/12/case-disappearing-postdocs

https://www.sciencemag.org/careers/2015/01/not-quite-stated-awful-truth

A Postdoc Is Not Your Only Career Option

https://cheekyscientist.com/top-10-list-of-alternative-careers-for-phd-science-graduates/

Flexible working: Science in the gig economy

https://www.nature.com/naturejobs/science/articles/10.1038/nj7676-419a

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