

## WHAT IS THE VALUE OF GRADUATE EDUCATION?

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Nationwide, university and government initiatives seek to better understand how to train and prepare a biomedical research workforce, and how research education and training translate into various career pathways. Numerous barriers, however, exist to collecting meaningful data that can be used for program improvement: Traditional training still places heavy emphasis on the skillsets that translate into academic and tenure-track positions, and tracking alumni, especially those that move job sectors outside of academia, is difficult and often time-consuming.

In addition, both biomedical trainees (graduate students and postdoctoral scholars) and trainers (faculty, career counselors, mentors) do not often know the exact value that advanced, scientific biomedical research training brings to careers outside of that tenure-track position. While the 2012 Biomedical Research Workforce Working Group Report [1] initially identified skill gaps that recent graduate students and postdocs have when entering the workforce, little has been done to access the intrinsic value of this training, by either the trainees (graduate students and postdocs), trainers (faculty, PI, and career services), or the employers. In focus groups, graduate students and postdocs reported high levels of anxiety about knowing how to define and follow their career of choice and about finding support for doing so. In effect, trainees neither understand the value of their training, nor had the competency needed to translate skillset onto various career pathways.

To better understand the value, or perceived value of today's training, the Stanford School of Medicine created a survey to assess the value and benefit of advanced graduate training biomedical sciences. Both employers from various sectors and trainees were given brief surveys (less than 15 questions, each) using both Likert and write-in response options. They were asked what trainees gleaned from graduate training and who they believed these skills translated into career opportunities later.

While the response rate was low (approximately 10%, each), results demonstrated that advanced biomedical was no longer just perceived as technical, scientific skill building, for example: overlapping terms of "perseverance," "independence," "teamwork," and "advanced problem solving" show that advanced training also develops a skill set transferable to many sectors. Still, employers reported that trainees are still not marketing their skills effectively on the job market and trainees in focus groups state there is little to no discussion of overall training goals with faculty.

Marketing the transferable skill sets listed above is key to transitioning into various careers of choice. We believe there are 3 reasons this is difficult for our trainees: 1) the path to each choice varies, thus making it difficult to tailor communications; 2) trainees do not often know the value their training brings in the first place; and 3) career decision making is not taught directly but, instead, must be independently sought out. In effect,

students come to graduate school not having thought about post-graduate opportunities. Once there, conversations revolve around their projects, not the post-training value of the project and skills themselves, especially not those transferable outside of academia.

In time for the FOBGAPT2 conference, we will have completed part two of our assessment, surveying alumni about why they made the academic and career choices they made. This, followed by a part three survey of trainees about similar decisions, will help us understand how to better prepare our trainees for their careers of choice. It is not enough to measure what our trainees do after they leave. We believe national, comparison data on faculty, employer, trainee, and former trainee career beliefs and decision making will answer a more important question: why do they make the decisions they do both during and after training. Once we can answer this question, we will be better equipped to move beyond helping trainees find jobs. This approach helps them find the career of choice that is right for them.

Reference:

1. <https://biomedicalresearchworkforce.nih.gov/index.htm>