

SHORT- AND LONG-TERM OUTCOMES AS MEASURES FOR PHD CAREER DEVELOPMENT

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* *Attending FOBGAPT2 meeting*

Career outcomes

There is a strong interest nationally to better understand the career outcomes for PhD scientists. This information is vitally important to informing national and local changes for biomedical career training. At University of Massachusetts Medical School, we post alumni career outcomes on our graduate school website and highlight them in presentations to prospective and current students and postdocs. Locally, this transparency empowers trainees to make informed career decisions and highlights our philosophy that all career outcomes are valued. We share both initial career outcomes and current outcomes (available for 93% of all PhD alumni). When presenting data to students in workshops, we highlight career outcomes for alumni 10 or more years out of their degree. Our intention is to draw trainees' focus to their long-term career interests, motivating strategic next-step decisions based on their own individual needs. This might counteract assumptions (supported by aggregate data) that the de facto next step should be postdoctoral training.

Career outcome data can be found at:

<http://www.umassmed.edu/gsbs/prospective-students/student-outcomes/student-outcomes/>

More about how career outcomes data have been collected and categorized:

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Other critical short- and long-term outcomes

In addition to career outcomes, we advocate for the inclusion of other measures that can elucidate the short- and long-term effectiveness of career development educational approaches. As part of our NIH BEST-funded programming at the University of Massachusetts Medical School (<http://best.umassmed.edu>), we have developed survey instruments to assess the short- and long-term impacts of our interventions on students, postdocs, faculty, and the institution. Our survey instruments are designed to measure changes in areas such as:

- Awareness and knowledge of career paths for PhD trained scientists
- Mentoring: types of mentors, frequency of mentor discussions, topics discussed
- Career interests
- Attitudes & beliefs that impact career development and career decision-making
- Planning for career goals
- Actions taken to support career development (by mentor and mentee)
- Perceived campus attitudes toward careers outside academic research
- Social cognitive career theory measures: self-efficacy, goals, & outcome expectations
- Efficiency in attaining career goals; satisfaction with career
- Perceived quality of working relationship with research advisor
- Performance within research setting & research productivity
- Satisfaction of all groups with institutional support for career development, availability of resources, preparation for future career

More about our approach to PhD career development, funded by an NIH BEST grant:

<http://best.umassmed.edu> (see ABSTRACT for Workshop 3)

We will publish reports describing our surveys and their measurement of our baseline population, short-term outcomes, & longitudinal outcomes. Cynthia.Fuhrmann@umassmed.edu

Multi-institutional evaluation

In addition to our own institutional evaluation, we have contributed to and are participating in an evaluation by NIH looking at outcomes across the seventeen BEST Consortium sites.

More about the BEST Consortium evaluation:

Meyers, F.J., Mathur, A., Fuhrmann, C.N., O'Brien, T.C., Wefes, I., Labosky, P., Duncan, D.S., August, A., Feig, A., Gould, K., Friedlander, M.J., Van Wart, A., Chalkley, R. "[The Origin and Implementation of the Broadening Experiences in Scientific Training \(BEST\) Programs: An NIH Common Fund Initiative.](#)" *FASEB J*, 30(2): 507-14.

NIH BEST Consortium website: <http://nihbest.org>