

The Road to Academia: Post-Doctoral Scholars in STEM

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Introduction

Grade school girls and boys tend to have similar interests and performance in regards to the science, technology, engineering, and mathematics (STEM) fields. Despite these similarities, gender differences emerge in high school where girls fall behind boys in STEM related studies. This disparity increases as women and men pursue their STEM undergraduate and graduate degrees. The underrepresentation of women oftentimes leads to isolation during their graduate studies, and especially as post-doctoral scholars (Easterly & Ricard, 2011). Consequently, many women leave academia because of the stress and challenges that accompany this isolation.

The current study examined the effectiveness of a post-doctoral program in the UW System designed to increase interest in, knowledge of, and applications to tenure-track academic positions at primarily undergraduate institutions (PUIs).

Methods

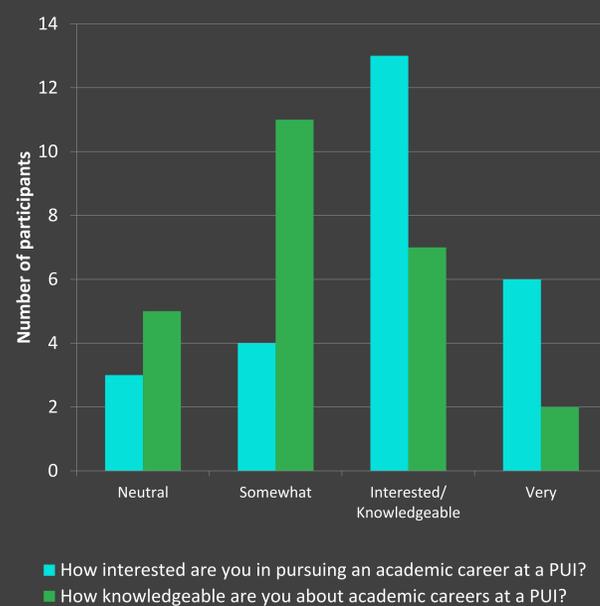
Participants: 13 female post-doctoral scholars were recruited for Year 1 of the program followed by 12 in Year 2 and 15 in Year 3 (n=40, Tbl 1).

Table 1: Demographics of Sample

Asian or Asian-American	5 (12.5%)
European or Euro-American	21 (52.5%)
Latina/o, Hispanic	1 (2.5%)
Middle Eastern or Asian-Indian	4 (10%)
Other Ethnicity	2 (5%)
First-generation college students (yes)	12 (30%)
Parent in science or engineering (yes)	10 (25%)
Female mentor in their field (yes)	22 (55%)

- Program:** Participants gave seminars at PUIs in the UW System and networked with faculty and undergraduate students in the host departments.
- Surveys:** Preliminary and post program surveys assessed participants' interest in and knowledge of tenure-track positions at PUIs using open-ended and rating scale questions. The post survey also inquired about the types of jobs participants applied to after participation in the program.

Figure 1: Interest In and Knowledge of Academic Careers at PUIs (Pre-program; n = 40)

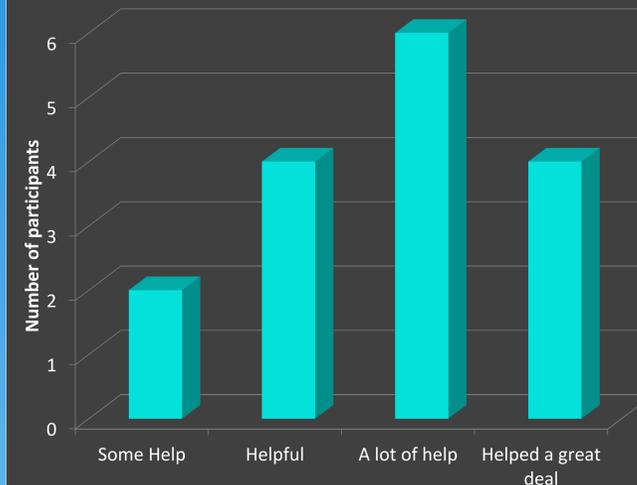


Results

Pre- and post-survey results have been gathered and analyzed for Years 1 and 2. Only pre-survey data is available for Year 3.

- Pre-program Survey:** 23 out of 40 participants were at least somewhat interested in pursuing a career at a PUI. 20 rated themselves as at least somewhat knowledgeable of academic careers at PUIs (Fig. 1).

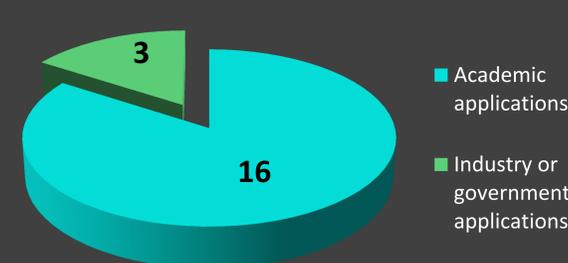
Figure 2: Extent that Seminar Increased Knowledge of Faculty and Careers at Institution Visited (n = 16)



Results (Continued)

- Post-program Survey:** 16 total participants responded from Year 1 and 2. All of the post-doctoral scholars found the program to provide at least some help with increasing their knowledge about faculty and careers at PUIs (Fig. 2). Furthermore, 12 of the participants said the program provided at least some help with improving their academic job search.

Figure 3: Types of Job Applications Submitted



- Nine of the 16 participants applied to academic positions. 7 of these were to PUIs (Fig. 3).



Discussion & Implications

According to two years of pre- and post-survey data, the seminar program has been effective at increasing female post-doctoral scholars' knowledge of tenure-track positions at PUIs. The results suggest these female post-doctoral scholars are learning more about academic careers as they participate in the program. However, the scholars' knowledge does not seem to affect their interest in pursuing these careers or the types of jobs they apply to after the program.

This program is one of the first of its kind, thus participant feedback is important. Positive feedback has included two participants who stated, "It was a great experience", and one even wished she could participate next year. Another participant responded with negative feedback about the program explaining that the purpose was somewhat unclear and a little "disorienting". This feedback is valuable to improving the program going forward.

This program aims to educate post-doctoral women about careers in academia while providing opportunities for professional development; as a result, increasing their chances for success as they pursue professional positions in STEM.

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References

Easterly, D.M. & Ricard C.S. (2011). Conscious efforts to end unconscious bias: Why women leave academic research.

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