

Research Brief

Modeling the Career Pathways of Women STEM Faculty through Oral Histories and Participatory Research Methods

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Paper presented at the 2010 ASEE Annual Conference in Louisville, KY

Background

Women increasingly earn advanced degrees in science, technology, and mathematics (STEM), yet remain underrepresented among STEM faculty. Much of the existing research on this underrepresentation relies on “chilly climate” and “pipeline” theoretical models to explain this phenomenon. However, the extent to which these models follow women’s actual career pathways has been undertheorized.

Purpose

In this paper our goal is to illustrate how oral history and participatory research are effective methods to: 1) identify women’s career pathways into STEM faculty careers; 2) compare and contrast career pathways to climate and pipeline metaphors as well as discover new metaphors; 3) identify critical points in women’s career pathways; and 4) discover new information about women’s paths into STEM faculty positions.

Methods

We present preliminary interview data collected for ADVANCE Purdue’s Academic Career Pathways study using oral history and participatory research methods. Each interviewee participates in two one-hour interviews. The first is an oral history that focuses on how they became STEM faculty. The second focuses on their experiences as STEM faculty. In this paper we describe in detail the interview protocol and data collection procedures.

Results

New ideas about women’s career paths into STEM faculty emerged through the language women used when telling their educational and career stories. Some women feel pipeline and chilly climate models fit their experiences. Personal satisfaction and altruistic thinking emerged as important themes in women’s career paths. Encouragement to pursue STEM careers early in life was also an important theme in the course of women’s career paths to STEM faculty. During the oral histories, new metaphors and climate descriptions emerged as participants described the working atmosphere in their departments and their feelings of fit within it. Age was not a central focus of our study, but emerged through the oral histories as a factor influencing feelings of “fit.” The oral histories also uncovered discrimination of young women faculty in STEM departments.

Conclusions

Using oral histories in conjunction with participatory research methods will create advances in research methodology and in theoretical modeling in engineering education research. New theoretical models developed with these methodologies will inform recruiting, hiring, and retaining practices aimed at increasing women’s representation among STEM faculty. The oral history methodology is also conducive to discovering the ways race and/or ethnicity affect group dynamics and feelings of fit, and to getting participants to reflect upon this.

Implications for Practice

- Oral histories and participatory research are a way for leaders and administrators to learn about climate in their institutions in a way that can provide deeper and more nuanced insight than surveys alone.

Citation

Hoegh, Jordana, and Alice L. Pawley. (2010) “Modeling the career pathways of women STEM faculty through oral histories and participatory research methods.” Conference proceedings of the 2010 American Society for Engineering Education National Conference and Exposition, Louisville KY, June 20-23.

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