



Longitudinal Study of Future STEM Faculty



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Purpose

Building on research supported by the *Center for the Integration of Research, Teaching, and Learning (CIRTL)*, our study is exploring the short- and long-term impact of **teaching-focused professional development (TFPD)** on STEM doctoral students interested in becoming postsecondary faculty.

Research Question

How does participation in teaching-focused professional development affect STEM doctoral students' teaching preparation, career pathways, and early-career performance?

Methods

We are using surveys and interviews to follow a panel of 3,000 late-stage doctoral students, from three research universities, for five years (2008-2013). Participating institutions include:

- Arizona State University
- University of Washington-Seattle
- University of Wisconsin-Madison

Data

These data come from our 2009 **Year One Survey** (N = 2098, 71% response rate).

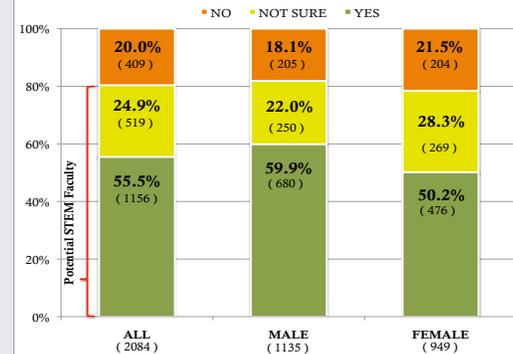
All Year One respondents will be surveyed again in **Years Three and Five**.

This project is funded by the National Science Foundation (Award 0817537). The Longitudinal Study of Future STEM Faculty is housed within the Wisconsin Center for Education Research in the School of Education at the University of Wisconsin-Madison.

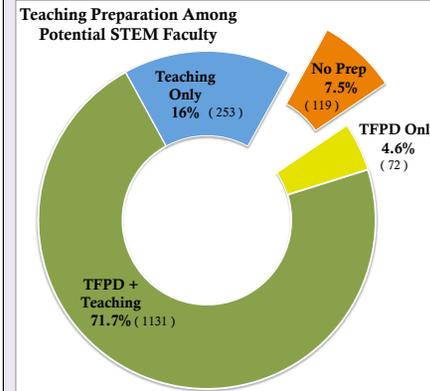
Are STEM Doctoral Students Interested in Faculty Careers?

- **Eighty percent** of respondents had definite (55%) or possible (25%) interest in a faculty position. We call them **Potential STEM Faculty**.
- Similar proportions of women (78.5%) and men (81.9%) are classified as Potential STEM Faculty.
- However, **women were generally less certain** in their interest (50.2% *yes*; 28.3% *unsure*) than men (59.9% *yes*; 22.0% *unsure*).
- At the same time, 1 out of 5 doctoral students had **no interest** in a faculty career.

Q: Are You Considering Applying for a Faculty Job in the Future?



Do Potential STEM Faculty Learn About Teaching?



- Among those respondents who are Potential STEM Faculty, **more than 90%** reported some form of teaching preparation (actual teaching and/or professional development activities).
- **78%** of Potential STEM Faculty had actual teaching experience (e.g., as teaching assistant, instructor of record).
- **More than 76%** have participated in one or more TFPD activities (e.g., workshops, courses, certificate programs).
- Most doctoral students **combined TFPD activities with teaching experience**.
- **However**, nearly 8% of Potential STEM Faculty reported having **zero preparation or experience** in teaching.

In Addition to the Year 1 Survey—

- We have developed a scheme for **classifying future-faculty programs** that also suggests good practices in graduate student professional development.
- To explore the impact of TFPD on career pathways and early-career performance, we are currently **interviewing 76 newly minted PhDs** now working as postdocs, faculty, and in other academic roles.
- We are developing a Year 3 questionnaire based on **Social Cognitive Career Theory** to measure self-efficacy beliefs about college teaching.



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