

Field Museum Women In Science (FMWIS) seminar
Why is the pipeline so leaky?
Jan Lariviere May 6, 2013

Why is the proportion of women in the educational pipeline from K-12 STEM through attaining full professorship positions at American colleges and universities so leaky? Can we fix it?

<http://www.nsf.gov/career-life-balance/> Although women comprise a significant and growing fraction of the U.S. STEM talent pool, recent studies demonstrate the adverse effects of attempting to balance the often extreme demands of career and life without adequate institutional support.

<http://www.nsf.gov/career-life-balance/brochure.pdf> brochure 2011

<http://www.nsf.gov/statistics/wmpd/2013/start.cfm> *Women, Minorities, and Persons with Disabilities in Science and Engineering (2013)* provides statistical information about the participation of women, minorities, and persons with disabilities in science and engineering education and employment. A formal report, now in the form of a digest, is issued every 2 years.

http://www.nsf.gov/bfa/dias/policy/career-life-balance/pollitzer_april2012.pdf
genSET in Europe

Data below mainly from NSF 2013 report listed above – this data does not always agree with NSF brochure from 2011; now calculating doctorates differently:

- The proportion of women earning doctoral degrees in all fields increased from 45% in 2001 to 49.5% in 2010.
- The proportion of S&E doctoral degrees earned by women has risen from 38% in 2001 to 41 percent in 2010.
- Women comprised 28% of the STEM workforce in 2010.
- Women constituted 33% of all employed academic S&E doctorates and 30% of full, associate, and assistant professors and instructors in 2006. The faculty rank with the highest percentage of women was the assistant professor level.
- Women's share of full-time tenured or tenure-track faculty positions in S&E rose from 10 percent in 1979 to 28 percent in 2006. In STEM fields, women are earning increasing shares of doctoral degrees, but their representation in tenured faculty positions is not keeping pace.
- The share of full-time, full professorships held by women has risen substantially over time. Despite the rise, women represent less than 25% of all full-time full professors in 2010.
- Unmarried women and women without children made greater numerical gains in their share of full professorships from 1975 to 2006 than did married women and women with children.

- Family characteristics, notably marital status and the presence of children at home, are related to women's chances of earning tenure and for holding either an associate or full professor rank.

NSF's Career-Life Balance Initiative

The goal of NSF's Career-Life Balance Initiative is to help improve the proportion of women attaining full professorship positions at American colleges and universities by addressing the balance of scientists' work with conflicting demands of life events (e.g., the birth or adoption of a child, raising children, or providing elderly dependent care). To that end, the agency will:

- Continue flexibility in timing the initiation of approved research grants.
- Continue no-cost extensions of awards.
- Continue grant supplements for research technicians or equivalent to sustain research when investigators need to provide family care.
- Encourage parental medical leave (paid, if possible), accommodations for dual-career couples, and part-time options.
- Support research and evaluation of advancement, attrition, and retention of women in STEM fields.
- Enhance the assessment and evaluation of NSF programs in terms of gender/diversity outcomes.
- Draw on relevant NSF Committee on Equal Opportunities in Science and Engineering recommendations (2010) to address issues faced by women of color in STEM.
- Study and recognize best practices for career and life balance.
- Foster mutually beneficial international research and training collaborations that provide career-life balance opportunities.
- Ensure compliance with Title IX of The Civil Rights Act to prevent gender discrimination in education programs.
- Incorporate family-friendly practices and policies in NSF's CAREER and all postdoctoral programs.
- Further integrate and enhance work-life balance practices into additional program guidelines, including for Graduate Research Fellows and ADVANCE, and subsequently through the broader portfolio of NSF activities, consistent with federal guidelines.
- Collaborate with federal agencies and professional associations to exchange best practices, harmonize career life policies and practices, and overcome common barriers to career-life balance.
- Communicate broadly to the STEM community, in order to clarify and catalyze the adoption of a coherent and consistent set of career-life balance policies and practices.
- Lead by example to become a model agency for gender equity.