

PathTech



**Successful Academic & Employment Pathways
in Advanced Technologies**

Women Forging Ahead in Traditionally Male Dominated Engineering Technology Fields

Chrystal A. S. Smith, Ph.D.
University of South Florida

Introduction

- College-educated workers earn higher wages and have lower levels of unemployment.
- Because of the weak economy and changes in the workforce, large numbers of women have enrolled in colleges.
- Community colleges are affordable, convenient, and flexible.

Radford, A. W., & Tasoff, S. (2009). Choosing a postsecondary institution: Considerations reported by students. National Center for Education Statistics 2009-186. Washington, DC: U.S. Department of Education.

Miller, K., Gault, B., & Gorman, A. (2011). Improving child care access to promote postsecondary success among low-income parents. Washington, DC: Institute for Women's Policy Research.

Introduction Cont'd

- In 2010, women were 57 percent of community college students, 3/10 women of color.
- 1/4 of these women are mothers with work, family, and caregiving responsibilities.
- Women are more likely to attend community colleges part-time than men.
- Slightly half of community college students earn a degree or certificate.

Hill, C., & St. Rose, A. (2013). *Women in community colleges: Access to success*. American Association of University Women. Washington, D.C.: AAUW.

Goldrick-Rab, S., & Sorensen, K. (2011). *Unmarried parents in college: Pathways to success*. *Fast Focus*, 9. Madison, WI: Institute for Research on Poverty, University of Wisconsin, Madison.

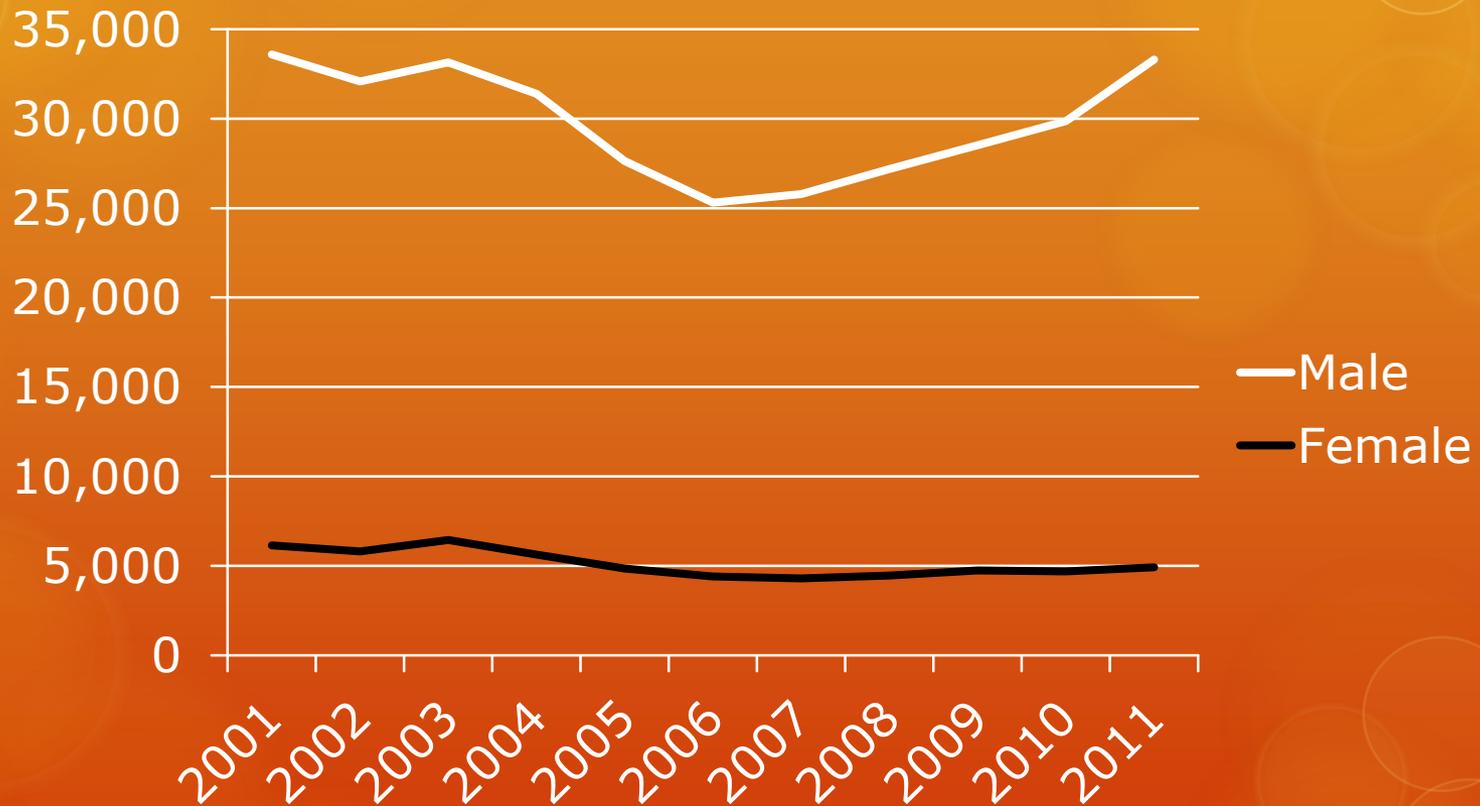
Background

- Over next 10 years, STEM jobs are expected to double.
- Women are underrepresented in STEM workforce, < 25 percent.
- Women with ET degrees/certification have higher average earnings and opportunities for advancement.

Hill, C., & St. Rose, A. (2013). Women in community colleges: Access to success. American Association of University Women. Washington, D.C.: AAUW.

Attwell, P., Heil, S., & Reisel, L. (2011). Competing explanations of undergraduate noncompletion. American Educational Research Journal, 48(3), 536–59.

Earned ET Associate's Degrees, by Sex, 2001–2011



Barriers to Women in ET

- Women often lack information about ET occupations and opportunities at community colleges.
- Stereotypes and about “appropriate” occupations for women.
- Women entering ET need the support of faculty, family, and peers.

Starobin, S. S., & Laanan, F. S. (2008). Broadening female participation in science, technology, engineering, and mathematics: Experiences at community colleges. *New Directions for Community Colleges*, 142, 37–46.

Packard, B. W., Gagnon, J. L., & Moring-Parris, R. (2010). Investing in the academic science preparation of CTE students: Challenges and possibilities. *Career and Technical Education Research*, 35(3), 137–56.

Research Questions

What are experiences of women enrolled in ET degree programs at community colleges? To what extent are their experiences similar and/or different?

- Why they decided to enroll in community college?
- Why they decide to pursue ET degree/certification?
- What are their career ambitions?

Sample

- Six women enrolled in ET programs at four community colleges in southwest Florida.

Methodology

- Conducted semi-structured interviews
- Administered a socio-demographic questionnaire

Analysis

- Descriptive statistics
- Coding interview transcripts
- Case studies

Characteristics

Characteristics	Number
Ethnicity	
White American	4
Latino/Hispanic	2
Marital Status	
Married	4
Single	2
Caregiving - Children	
Yes	3
No	3

Characteristics Cont'd

Characteristics	Number
Education	
High school diploma	4
Associate's degree	1
Bachelor's degree	1
Current Employment	
Yes	4
No	2
Full-time Employment	
Yes	2
No	2

Characteristics Cont'd

- Age range: 30 – 56 years; Average 42 years
- Types of funding:
 - Grant/Scholarships
 - Tuition waiver/Cash
 - Loans/GI Bill
 - Savings
 - Savings/Grant/Scholarships
 - Loans/Savings/Grant/scholarships

Candace

- Married 40 year old white American (no kids)
- Works full-time in international sales
- Considered enrolling at ITT and DeVry
- Enrolled in ET part-time
- Plans to transfer to USF to pursue BS in electrical engineering
- EE BS will make her “a lot smarter,” less reliant on company engineers and gain their respect

Honorina

- Recently divorced 44 year old Latino American (3 kids)
- Considered entering fast food industry
- Works part-time at HCC
- Enrolled in ET full-time
- Interested in a ET job in quality control rather than working with machines
- Would like to pursue 4 year degree with online courses

Megan

- Single 47 year old white American
- Laid off (electronics assembler)
- Enrolled in ET full-time
- Vet – VRAP, loans
- Considered ITT, but too expensive
- Wants a better paying ET job and more job opportunities

Adriana

- Married 30 year old Latino American (kids)
- Working part-time at SPC
- Enrolled in ET full-time (has certificate)
- Completing BS in Business Administration
- Unsure if to enter workforce now or finish ET degree
- Searching for job opportunities in manufacturing and engineering

Helena

- Married 56 year old white American
- Works full-time (purchasing manager)
- Enrolled in ET part-time
- 90 percent of ET courses online
- Intends stay with her current company
- Plans to transfer to supervisory position in engineering department where she will work with her hands

Sarah

- Married 35 year old white American
- Unhappy with her job in insurance
- Initially enrolled in ET part-time
- Recently stopped working to focus on school and 2 kids
- Interested in a cutting edge job that she is passionate about

Themes

- Work, family, and caregiving responsibilities means that education must be convenient
- Education must be affordable
- No fear of mathematics and/or science
- Earn their ET degrees to get increase wages/promotions and respect from their male peers and family

Conclusions

- Women in ET are meeting its challenges, but continue to face barriers: Family responsibilities, affordability, stereotype.
- Community colleges need to conduct outreach to women so as to increase their numbers in the ET program.
- Research needs to be conducted to examine barriers to women getting hired in ET.

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<http://sociology.usf.edu/pathtech/>

