NSF Highlights

Technology Programs Boost Retention Rates of Both Women & Men in Community Colleges
Highlight ID: 18417, Version: AC/GPA

In the NSF-funded CalWomenTech project, early indicators show that community colleges that proactively recruit women into technology programs will have a significant increase in the percentage of women students in a little over a year's time. Recruitment strategies included:

- Printing and distributing posters featuring role models in the college's occupational area who were program graduates.
- Creating a website section devoted to recruiting women into the college's targeted program with role model, program, and labor market information and links to women in technology associations.
- Printing and distributing tear-off flyers with program contact information and a link to the website.
- Printing and distributing a tri-fold brochure highlighting role model graduates, and program and labor market information.

Of the four community colleges participating in the CalWomenTech Project's first research group, the two sites that implemented project recruitment strategies within the recommended timelines had an increase in women in their targeted programs of approximately 12%. In addition, a college that was able to complete one of the four strategies before the fall semester (posters) had a smaller increase of 5%, while the college that did not implement any of the strategies saw a decrease of -3%.

Notably, retention strategies implemented by the colleges in the CalWomenTech Project led to a significant net increase in the completion rates of not only females, but also males, in several of the colleges. The retention strategies that were implemented in the colleges with the biggest leaps in retention included:

- On campus faculty trainings focusing on teaching to female learning styles and integrating female students into the classroom.
- Revising the program's curriculum to be more female friendly. Some changes included using more contextual examples that appeal to women, more collaborative projects and ensuring female students spent equal time using the equipment in the labs.

The two colleges that saw the largest increases in female completion rates, from 81% to 100% and from 57% to 100%, both saw a 20% increase in male retention. Overall, the aggregate baseline retention rates were 76% for women and 77% for men across all eight colleges. Aggregate retention rates have improved and now the male and female retention rates are equal at 78%. All retention strategies were implemented in the classroom right away and did not require significant lead time, so their impacts could be seen in only six to eight months.

The targeted program's occupational areas for this project included:

- Automotive Technology (including Hybrid-Alternative Fuel Technology)
- 3-D Animation and Video Game Art
A key component of this extension services grant is to bring best practices to both these eight community colleges and the larger education community. Some of the best practices resources available on the project site include:


This project is lead by Donna Milgram of the Institute for Women in Trades, Technology and Science and Carmen Lamha of the City College of San Francisco and was funded by NSF’s Research on Gender in Science and Engineering (GSE) Program.

**Primary Strategic Outcome Goal:**
- Broadening Participation to Improve Workforce Development

**Secondary Strategic Outcome Goals:**

*In terms of intellectual merit, why is this outcome notable and/or important?*

This project aims to increase recruitment and retention of women in technology programs in various community colleges. Findings show that the project’s strategies are successful thus far, while also increasing rates of male students as well.

*In terms of broader impacts, why is this outcome notable and/or important?*

This project has the potential of increasing recruitment and retention rates of students in technology programs at 2-year colleges. Community colleges are generally a gateway for many students to pursue higher degrees in STEM education and, therefore could impact their future participation in STEM fields.

**Does this highlight represent transformative or potentially transformative research? If so, please explain why. For more information, see Report to Congress: Transformative Research at the National Science Foundation, April 16, 2008**

No

**Does this highlight represent Broadening Participation? If so, please explain why.**

Yes

Through successful recruitment and retention strategies, this project broadens participation of students from community colleges. Since these students generally are from various ethnic backgrounds, women and/or low-income status, this project broadens the participation of underrepresented groups in STEM fields.

*Are there existing or potential societal benefits of this research? It is important for NSF to be able to provide examples of NSF-supported research that have societal benefits, including benefits to the U.S. economy.*

Yes

This project benefits society because students who are generally underrepresented in STEM fields are being retained in STEM degree programs. Moreover, since these students generally are low-income in status, pursuing STEM degrees can boost their economic situations, as well as develop society as a whole.

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**NSF Award Numbers:**

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**Institution Name:** Institute for Women in Trades, Technology and Science

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