

Workforce Innovations

May/June

2002

News and insights to meet the needs of an evolving community of businesses, job seekers and educators

Feature Article: Women and Minorities in the Technology Workforce

“The long-term health of our region’s economy depends on how fully we commit ourselves to preparing all students—especially those who are now least engaged—for the jobs of the future.”

—John Vasconcellos, California State Senator, 13th District

Despite progress toward equality, women and minorities remain under represented within technology careers. Two recent studies help shed light on the low participation that exists today, and offers suggestions of what we as a community can do to make a difference.

With a goal of examining technology familiarity among area students to gauge the linkage between today’s students and future technology careers, more than 2,500 8th and 11th graders in Silicon Valley schools were surveyed. This effort, by A.T. Kearny in conjunction with Joint Venture Silicon Valley, resulted in the completion of their *2002 Workforce Study, Connecting Today’s Youth with Tomorrow’s Technology Careers*. Another study, Workforce Silicon Valley’s (WSV) *The Gender Difference*, looks at the results of focus groups and attitude surveys of 325 Silicon Valley high school students to find ways to close the technology gender gap.

Overall the *2002 Workforce Study* found access and usage of computers to be high (99 percent). Awareness of technology careers is also high (73 percent), but lower in comparison to more traditional careers. However, interest in pursuing technology careers is very low (32 percent). According to the study, the awareness level among Hispanic students is lower than that of their peers.

The studies show that in order to remain competitive in the future labor market, students need to prepare themselves by gaining the skills

that will be in demand. Robert Caret, President of San Jose State University says, “The Digital Divide is not just about access to technology. It’s about access to education and careers”. The report found that 82 percent of students are planning to pursue some type of postsecondary education. Of that number, 53 percent of Hispanic students plan on attending a four-year college, compared to Asian (74 percent), African American (69 percent) and White students (69 percent).

The study suggests that this “interest gap” is due in part to negative images students have of high-tech careers. The results also reveal the considerable influence that students’ social networks have on their career interests and on their access to career information and guidance.

WSV’s report echoes other current research that illustrates the gender gap in technology careers. The students’ responses

as to why more women are not pursuing technology careers include lack of exposure to technology at an early age, as well as a perception by both sexes that girls are not smart enough to pursue those careers. They also said girls need to be more interactive and social in the context of technology instead of isolated and independent. Also, they felt a correlation with technology career interest and a disparity in math achievement between boys and girls.



Continued on Page 2: Women & Minorities in the Tech Workforce



- Advanced Micro Devices
- Analog Devices, Inc.
- Applied Materials
- Billmore Hotel
- Center for Continuing Study of the California Economy
- Center for Quality of Management
- County of Santa Clara
- Department of Rehabilitation
- Employment Development Department
- Foothill DeAnza Community College District
- Hewlett Packard Company
- Housing Authority of the County of Santa Clara
- Housing Trust of Santa Clara County
- Intel Corporation
- Intuit
- Ironworkers Apprenticeship & Training Program
- Kaiser Permanente
- Lockheed Martin Missiles & Space
- Microsoft
- National Council on the Aging, Inc.
- Network Appliance, Inc.
- Polycom Corporation
- PRI Automation
- San Jose Newspaper Guild
- Santa Clara Unified School District
- Sollectron Corporation
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The *2002 Workforce Study* also found there is a gender gap regarding student awareness of and interest in technology careers. Only 23 percent of females, compared to 42 percent of males, report expressing interest in pursuing a high-tech career. According to the fall 2000 enrollment figures at San Jose State University, women represented 51 percent of the student population but only 19 percent of engineering majors.

The Gender Difference suggests opportunities should be created to expose females to technology and technology careers at a younger age, and programs should be developed that link students

with female role models. To address one of the most common issues brought up by women, developing a program that integrates values clarification within the framework of IT education will help girls perceive how a technology career can coexist with their family and cultural values. Both reports call for partnerships between education, business, and the community to focus on these labor shortages.

NOVA and Joint Venture Silicon Valley sponsored a community forum on May 8th to discuss these studies and develop ideas for action by education and other community organizations.

CONNECT! Evergreen Valley College Summer Academy Program



Evergreen Valley College (www.evc.edu), established in 1975, is an energetic institution located in the eastern foothills of San Jose. Created by and built for the community of San Jose and its surrounding areas, the college translates instructional needs into educational experiences available to all.

Among other objectives, a large part of Evergreen Valley College's mission is an ongoing commitment to diversity. In support of this mission, the college offers an intensive eight-week Summer Academy program in partnership with the NOVA Skills Gap program. The Academy targets underserved populations for systems administration training and is largely funded and developed by Sun and Oracle, and the Skills Gap program administered by NOVA.

In the summer of 2000, the first year of the program, 25 women and minority students were enrolled. They participated in four major courses of study: Networking, Solaris, Solaris Administration, and Communications

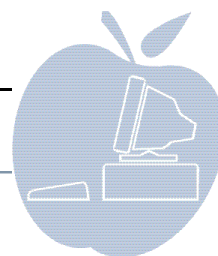
Skills for IT Professionals. This latter class included grammar, writing consumer-oriented letters and memos, and resume preparation, and was a great step in supplementing the students' technical skills with the "soft skills" necessary for success on the job. In fact, the Communications Skills for IT Professionals class has proven so integral to students' career success that other IT training institutions nationwide are now incorporating it into their programs.

Since the program's inception, the majority of students completing the Summer Academy program has either continued his or her education, or found a job where the skills learned in class were directly applicable. In recognition of this accomplishment, the Summer Academy has received a commendation from the U.S. Department of Commerce. For more information about the Skills Gap program or the 2002 SUN Summer Academy, contact Heidi Bonner at NOVA at (408) 730-7232 or email hbonner@novaworks.org.

NOVA Program

Tech-to-Teaching

Recruiting Quality Math and Science Teachers for K-12 Schools



NOVA's Tech-to-Teaching program will assist 50-75 dislocated technology workers in a career change to become teachers. The program stems from Governor Gray Davis' \$1.6 million Teacher Training initiative to recruit math and science teachers. The funding from this initiative will help program participants pay for university coursework, support services, learning materials, and necessary fees associated with obtaining a teaching credential. Tech-to-Teaching will train laid-off technology workers and dot-comers who have a passion to become quality educators. The program presents three main options to participants:

- Attend a credential program as a full-time student
- Teach full-time as a pre-intern teacher
- Teach full-time as an intern teacher

California is expected to have a shortage of 300,000 teachers in the next few years. The majority of this shortage will exist in math and science, as well as special education, ESL, and foreign language teaching. The State must ensure a competent workforce to remain a competitor in the global economy. Program participants are expected to help ease the State's digital divide by educating students in technology subjects.

To find out more about the Tech-to-Teaching program, please visit:
www.novaworks.org/nova/teachertraining.html
 or contact Juliet Reyes at (408) 730-7232.

Bulletin Board

LMI + Workforce Development Forum

Education Industry Report: Those who can...TEACH

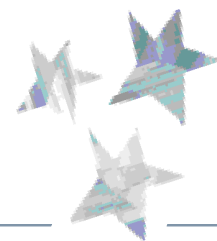
NOVA's Labor Market Information Plus (LMI+) unit held its most recent workforce development forum on Thursday, May 2 at De Anza College in Cupertino. Guest speakers included City of Cupertino Mayor Richard Lowenthal, DeAnza College President Dr. Martha Kanter and Santa Clara County Office of Education Director of Human Resources Mary Mulholland. The forum promoted the latest release of the LMI+ report, *Those who can...TEACH* which addresses the escalating teacher shortage crisis in Silicon Valley by discussing issues important to prospective educators. The event was attended by over 150 community guests, and included panel discussions, open networking sessions and Q&A with local education professionals, principals and teachers.

Attendees heard how the growing demand for K-12 teachers has transformed career pathways and dra-

matically increased job opportunities to teach young minds and make a difference in Silicon Valley.

As with all LMI+ reports, *Those who can... TEACH* enhances the accessibility of local labor market information and strengthens today's workforce by transferring key skills-based information between job seekers, employers and educators.

By illustrating pathways to teaching careers, the report also complements NOVA's recent collaborative efforts with the Central California Teacher Recruitment Center in launching the Tech-to-Teaching program. The program was developed to implement the new Technology to Teaching initiative as described by Governor Gray Davis during his visit to NOVA last November.



Labor Market Information

Gender Gap Narrows, but Males Still Dominate Tech Occupations

Nationwide, females gained ground in a number of technical occupations in 2000; however, most of those increases were slight. Males continue to hold the upper hand.

Currently, female representation is greatest in mathematical and computer scientist occupations. Female computer systems analysts and scientists held 29.2 percent of the total number employed in 2000. Operations and systems researchers and analysts have the greatest gender equality—females represented 45.5 percent of the total employed in 2000 (an increase of 14.2 percent over 1983).

Females showed slight gains in all engineering categories but only represent a small portion of the total employment. Computer programming is the only category that indicated a negative trend. In 1983, females represented 32.5 percent of the total which dropped to 26.5 percent in 2000.

Occupation	1983		2000	
	Total Employed (1,000)	Female (% of total)	Total Employed (1,000)	Female (% of total)**
ENGINEERS*	1,572	5.8	2,093	9.9 (4.1)
• Aerospace Engineers	80	6.9	78	9.7 (2.8)
• Chemical Engineers	67	6.1	85	10.4 (4.3)
• Civil Engineers	211	4.0	288	9.7 (5.7)
• Electrical & Electronic	450	6.1	725	9.8 (3.7)
• Industrial Engineers	210	11.0	244	15.3 (4.3)
• Mechanical Engineers	259	2.8	342	6.3 (3.5)
MATHEMATICAL & COMPUTER SCIENTISTS*	463	29.6	2,074	31.4 (1.8)
• Computer Systems Analysts	276	27.8	2,074	29.2 (1.4)
• Operations & Systems				
• Researchers & Analysts	142	31.3	227	45.5 (14.2)
COMPUTER PROGRAMMERS	443	32.5	699	26.5 (-6.0)

*Includes other occupations, not shown separately.

**Numbers in parentheses indicate percent change between 1983 and 2000

Note: Data is for U.S. Similar info for Santa Clara County between 1990 and 2000 will be available in 2003.

Source: U.S. Census Bureau, Statistical Abstract of the United States: 2001

Featured Website



The Rainbow/PUSH Coalition
www.rainbowpush.org

The Rainbow/PUSH Coalition (RPC) is a merger of Operation PUSH (founded in 1971) and the National Rainbow Coalition (founded in 1985). The organizations' accomplishments are vast, including registering hundreds of thousands of voters, mediating labor disputes, and negotiating economic covenants with major corporations.

On April 24 and 25, 2002, RPC sponsored the Third Annual Digital Connections 2002 Conference. The Thursday, April 25 session was held at the San Jose Fairmont Hotel. Keynote speakers included Bill Gates, Chairman of the Microsoft Corporation and John Thompson, Chairman and CEO of Symantec Corporation, who presented their vision of the Digital Revolution, the business value of diversity, and the necessity for creating new "digital connections" with schools, communities, and businesses. The Rev. Jesse L. Jackson, Sr. was the keynote speaker at the Wednesday "Build Your Business" seminar held at the Microsoft Mountain View Campus.



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