

CONSTRUCTING EQUITY:

**Promising Practices for Recruiting and Retaining Students in Career
and Technical Education Programs That Are
Nontraditional for Their Gender**

June 2006



A publication of

**Programs and Practices That Work: Preparing Students for
Nontraditional Careers Project**

A joint project sponsored by

The Association of Career and Technical Education

The National Alliance for Partnerships in Equity

The National Association of State Directors
of Career Technical Education Consortium

The National Women's Law Center

Executive Summary

Constructing Equity: The 2006 “Programs and Practices That Work: Preparing Students for Nontraditional Careers” Project

This report describes promising practices for improving students' access to career and technical education (CTE) programs that are nontraditional for their gender. It relies on practices utilized by the winners of, and nominees for, the 2006 “Programs and Practices That Work: Preparing Students for Nontraditional Careers” Project award. The Programs and Practices That Work (PPTW) Project was created in 2005 by the Association of Career and Technical Education (ACTE), the National Alliance for Partnerships in Equity (NAPE), the National Association of State Directors of Career Technical Education Consortium (NASDCTEc), and the National Women’s Law Center (NWLC) to recognize programs that have successfully raised the enrollment and retention of under-represented students in nontraditional CTE courses. This year’s recognized programs are: The Illinois Center for Specialized Professional Support (ICSPPS) (highest recognition for “The Nontraditional Look” (NTO Look)) and the Minneapolis Public Schools (honorable mention for “High Tech Girls’ Society”).

Educators and administrators are encouraged to implement programs and practices that incorporate these promising techniques already used by other institutions:

- Implement research-based strategies for improving enrollment and retention of students in nontraditional CTE programs:
- Effectively identify and build strong education-community partnerships, interagency coalitions and business partnerships:
- Introduce students to role models, including professionals who have nontraditional careers and peers who participated in nontraditional CTE programs:
- Provide hands-on opportunities for students to learn about and apply skills:
- Centrally coordinate all the schools in a community college or secondary system:
- Build upon or cultivate an institutional commitment to gender equity and compliance with civil rights laws and use the program as an opportunity to train all staff about gender equity:
- Respond to the needs of the local labor market and feature high-demand occupations:

- Measure the outcomes and results of the project by collecting data about the students who participate in the program or benefit from the practice, including whether they have been retained in the field or continued their education in other areas;
- Collect testimonials and seek both positive and negative input from program participants to measure their enthusiasm for the program and make improvements where necessary;
- Document the program in a manner that is replicable by others attempting to implement similar programs;
- Expand model programs to other under-served populations that have historically not participated in careers that are nontraditional for their race, disability or socio-economic status.

Nominations for the 2007 PPTW recognition will be accepted starting in September 2006. See www.napequity.org/ or www.acteonline.org/ for more information.

I. INTRODUCTION

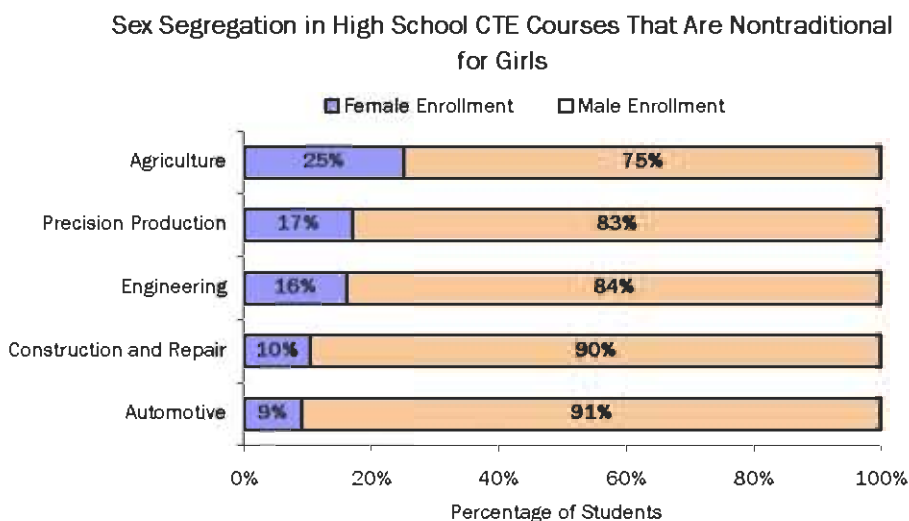
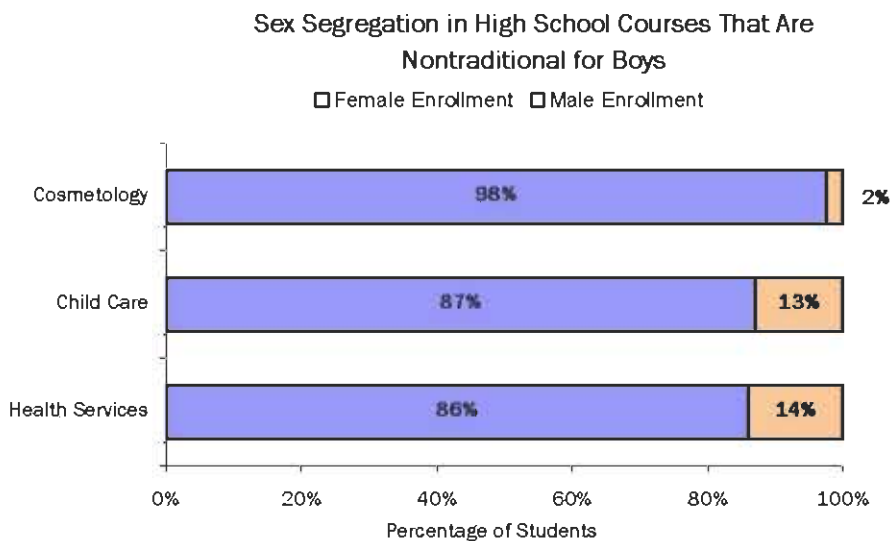
Thirty-four years following the enactment of Title IX, girls continue to be the vast majority of those who enroll in traditionally female career and technical education courses, such as cosmetology and child care. And boys make up all but a tiny percentage of the students in traditionally male fields such as auto mechanics and construction and repair. These enrollment patterns have serious consequences, particularly for girls. For example, traditionally female occupations, in which large numbers of girls are concentrated, pay substantially lower wages than nontraditional fields. But boys also are disadvantaged by the enrollment patterns, because they may be missing out on opportunities to pursue promising positions in high-demand and high-growth fields, such as nursing and other health-related careers. While these fields may pay less than many traditionally male careers, they are projected by many states to experience significant growth in the upcoming years.

In an increasingly competitive and global economy, the factors that create real barriers to student participation in fields that are nontraditional for their gender cannot be ignored. This Report recognizes two programs that have implemented promising approaches for encouraging students to explore nontraditional training and employment. The Illinois Center for Specialized Professional Support (ICSPS) received the highest recognition for its program, "The Nontraditional Look (NTO Look)," which improved nontraditional CTE enrollment and retention throughout the state of Illinois. The Minneapolis Public Schools received an honorable mention for its "High Tech Girls' Society," which has increased girls' exposure to, and enrollment in, nontraditional classes in Minneapolis.

Background on Career and Technical Education. Career and technical education ("CTE"), formerly known as vocational education, makes up a significant portion of both secondary and post-secondary education in the United States. Over 95% of high school students take at least one CTE course, and about one-quarter of high school students take a concentration of three or more related CTE courses before they graduate from high school.¹ Participation in CTE at the post-secondary level is high as well — nearly one-third of all postsecondary students are enrolled in sub-baccalaureate vocational programs.² Moreover, CTE participation rates have grown significantly in just a short period. Nationwide, over 15.1 million students were enrolled in CTE in 2004—an increase of 57% from the 9.6 million enrolled in 1999.³

CTE programs are increasingly academically rigorous and can offer training in new and emerging high-tech fields. For example, new programs in courses such as biotechnology and robotics have garnered national attention.⁴ Furthermore, among the recent findings about CTE are that it can keep students engaged, an important factor in reducing the high drop-out rate⁵ and that CTE can lead students to take higher levels of math and science.⁶ Moreover, students with a CTE background can also have the foundation to obtain high-paying, stable employment immediately following graduation from high school. And for those students who pursue post-secondary studies (and CTE students enter postsecondary education at approximately the same rate as all high school students),⁷ CTE programs offer skills that can benefit them as they continue their education.

CTE Enrollment Patterns Have Not Changed Substantially Since Title IX Was Passed. Despite the many exciting opportunities in CTE, recent enrollment data show that these benefits are not equally available to all students. Even though Title IX of the Education Amendments of 1972—the federal law prohibiting sex discrimination in education—has been in effect for almost 35 years, some CTE courses and job training opportunities are still dominated by one gender. For example, in high schools across the country, programs such as automotive technology, construction and engineering are dominated by male students, while programs such as nursing are dominated by female students. The following charts demonstrate the disproportionate enrollment patterns of male and female students in CTE courses that are nontraditional for their gender.



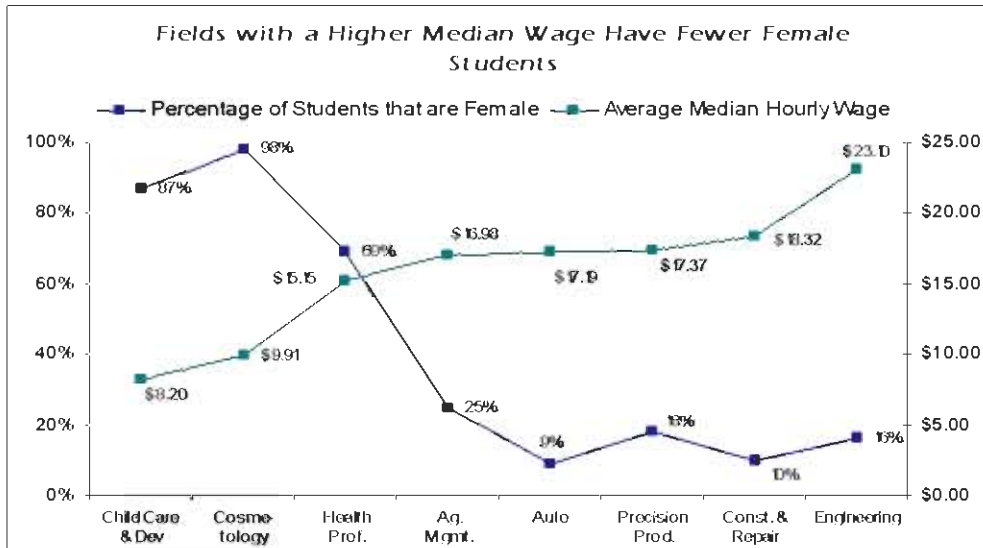
In fact, the most recent available data show that the level of under-representation of women in CTE fields that are nontraditional for their gender has remained virtually unchanged since 1979. High school girls also continue to be under-represented in critical math and science

fields as well. In 2005, girls made up only 31% of students taking AP physics exams and only 15% of students taking AP computer science exams.⁸

While the reasons for this persistent under-representation are complex, preliminary research on CTE and research on math, science, engineering, and technology education suggest that, at least for female students, lack of enrollment in nontraditional courses can be linked to sex discrimination and sex-stereotyping — indeed, stereotyping limits options for boys as well. Sex discrimination and stereotyping — such as permitting sexual or gender-based harassment in classrooms, inadvertently allowing boys to monopolize equipment or teacher attention, or steering girls and boys away from nontraditional courses—can create real barriers that prevent students from being able to make informed choices about or pursue their education and careers.⁹ Other barriers that may contribute to the disparities in enrollment include:

- Student and parent lack of awareness about nontraditional CTE opportunities;
- Student internalization of sex-stereotyped roles;
- Peer pressure to avoid nontraditional CTE courses;
- Cultural pressure to avoid nontraditional CTE courses;
- Reluctance to be a “pioneer” in a new field.

The Enrollment Disparities Have Significant Consequences. Although lack of access to educational opportunities affects both genders, it is particularly troubling for women in today’s economy. Discouraging young women from pursuing nontraditional training can limit their access to nontraditional jobs, which are more likely to be high-paying than traditional jobs. As the chart below shows, male-dominated fields pay a median hourly wage of \$18.04, while the traditionally female fields pay just \$13.80 on average. This translates into a median annual salary of \$37,520 for men and \$28,695 for women – a \$8,825 wage gap.¹⁰ In local labor markets, some of the most high-demand and high-wage jobs are nontraditional for women. In New Jersey, for example, network systems and data communications analysts are in very high demand and make two-to-three times as much as the other four fastest growing occupations in the state. And among the twenty-five occupations with the highest percentage growth projected for 2004-2014 by the New Jersey Department of Labor, none of the five occupations with the highest hourly median wage are traditional for women.¹¹



These disparities are a problem for men, too. In New Jersey, three of the five occupations with the highest percentage growth projected for 2004-2014 by the New Jersey Department of Labor—(1) veterinary technologists and technicians, (2) home health aides, and (3) medical assistants—are nontraditional for men and are projected to be in high demand over the next 10 years.¹²

There are Steps Administrators, Educators, Lawmakers and Advocates Can Take. The good news is that progress is possible. Administrators, educators, lawmakers and advocates can work cooperatively to take steps to ensure that neither sex discrimination nor outmoded stereotypes affects students' attitudes toward, access to, enrollment in, or completion of nontraditional programs that can lead to higher paying careers. To assist in this endeavor, the Association of Career and Technical Education (ACTE), the National Alliance for Partnerships in Equity (NAPE), the National Association of State Directors of Career Technical Education Consortium (NASDCTEc) and the National Women's Law Center (NWLC) jointly sponsored the Programs and Practices that Work (PPTW) project to highlight programs that have overcome barriers that have historically limited opportunities based on gender and found innovative ways to encourage students to explore nontraditional training and employment. PPTW is designed to help schools eliminate subtle and unintended, as well as overt, barriers that students face in enrolling in and completing nontraditional courses and programs.

In 2005, three promising educational institutions were selected for PPTW recognition. Minot Public Schools received the highest recognition for providing regular opportunities for students to explore nontraditional careers, including technology camps and targeted career awareness days. Honorable mention went to the Michigan Department of Labor & Economic Growth for its Breaking Traditions Award and to Northeast Community College in Norfolk, Nebraska, for its Career Camp. Additional information about these programs may be accessed in the 2005 Report, *Forging New Pathways: Promising Practices for Recruiting and Retaining Students in Career and Technical Education Programs that are Nontraditional for their Gender*. *Forging New Pathways* may be accessed at http://www.napequity.org/pdf/Report2005_PPTW_Final.pdf.

This Second Annual Report highlights the programs selected for recognition in 2006 and features promising practices for gender equity in CTE programs. The Report also recommends concrete action steps and identifies federal and state resources available to administrators, educators, and lawmakers to improve gender equity in CTE programs and courses that are nontraditional for one gender.

II. THE 2006 HONORED PROGRAMS

For 2006, ACTE, NAPE, NASDCTEc, and NWLC selected two programs for PPTW recognition. The Illinois Center for Specialized Professional Support (ICSPS) received the highest recognition for its program, "The Nontraditional Look (NTO Look)," which improved nontraditional CTE enrollment and retention throughout the state of Illinois. The Minneapolis Public Schools received an honorable mention for its "High Tech Girls' Society," which has increased girls' exposure to, and enrollment in, nontraditional classes in Minneapolis.

Highest Recognition—Illinois Center for Specialized Professional Support, The NTO Look, Illinois. The NTO Look is a multi-phase program developed by the Illinois Center for Specialized Professional Support ("ICSPS") at Illinois State University and designed to encourage a local, collaborative response to improving recruitment and retention of students preparing for nontraditional careers. The NTO Look encourages secondary educational institutions to partner with post-secondary educational institutions to implement and strengthen their nontraditional programs. The partnerships must base their program on research on the practices that work in recruiting and retaining students in nontraditional programs; set realistic long-term and short-term goals; design and implement activities to help meet those goals; and evaluate the effectiveness of the program. In the implementation phase of each site's project, the NTO Look provides each partnership with professional development, technical support, specialized resources, and financial assistance. Each partnership receives a monetary award upon meeting its action goals. NTO Look is administered through funds from the Carl D. Perkins Act of 1998 (Perkins III), and funding from the Illinois Center for Specialized Support, a project sponsored by Illinois State University. Participants are encouraged to use the NTO Look funds to leverage additional education and business dollars at local, state, and federal levels.

Two stand-out elements of the NTO Look are that it encourages recipients to form community-based partnerships and to engage in continuous, research-driven self assessment. In addition to the required secondary/post-secondary partnership, the NTO Look Program encourages its recipients to reach beyond the education community and connect with business and other community members as additional partners for their programs. This broader partnership is important to ensure that the program is grounded in the relevant needs of the community and that students receive mentoring and internship opportunities.¹³

Another important element of the NTO Look is its self-assessment requirement. Each project must complete a self-study and consider accompanying research prior to designing their activities. The NTO Look Self-Study systematically assists educational organizations in identifying strengths and challenges in recruiting and retaining students preparing for

nontraditional occupations. It leads them through a series of questions and provides research-based information on barriers to, and successful strategies used, to improve opportunities for students in nontraditional training. This process has enabled partnerships to design programs that meet the needs of the local community. For example, Sauk Valley Community College, together with Whiteside Regional Vocational System, used the NTO Look assessment to design a project that strategically distributed information on nontraditional careers to 17 middle schools and 12 high schools.

Nearly 80% of Illinois community colleges participated in NTO Look and similar projects sponsored by ICSPS. In 2005, Illinois' post-secondary system achieved its negotiated performance level of the Perkins III Fourth Core Indicator for the first time and has credited NTO Look as one of two factors contributing to its improvement.

Honorable Mention – Minneapolis Public Schools, High Tech Girls' Society, Minnesota.¹⁴

The High Tech Girls' Society ("HTGS") was launched in 2003 to increase the representation of girls in traditionally male-dominated, high-tech courses such as aviation, engineering and information technology. The program serves a population that is primarily low-income girls of color. Preliminary data show that 79 percent of HTGS participants are students of color, which is almost 7 percentage points higher than the district average.

The HTGS implements a rigorous academic and technical curriculum through after-school, hands-on learning activities, tours, seminars and other related school activities. The club works in cooperation with colleges, universities, and business partners to provide mentoring and counseling as well. Mentoring is essential to the program, and the HTGS connects the girls with women who are employed in high-tech fields, provides access to professional organizations that support women in high-tech careers, and gives opportunities to meet and network with other young women with similar interests in Minneapolis high schools. Research into effective practices has shown that the field trips to colleges and worksites, and related networking, mentoring, and teacher training activities, will help girls to become leaders in traditionally male-dominated classes. In addition, research shows that the presence and success of these girls in CTE courses, and their advocacy of the courses to friends, will encourage other girls to enroll in and complete the programs.

The participation of girls in nontraditional classes in Minneapolis Public Schools has been increasing since the inception of the HTGS. In 2002, male students made up 61% of students enrolled in high tech courses, while female students made up only 39%. By 2004-2005, male students made up just over 56% of students, and female students made up just under 44%. Moreover, female enrollment in high-tech classes increased by as much as 6 times in some cases, including increased female participation in male-dominated classes like engineering, IT, construction, and auto technology. And a survey of 2005-2006 "High Tech" girls indicates that they will take *more* math and science and *harder* math and science, than is required through Minneapolis Public School's minimum graduation requirements. The Minneapolis Public Schools will continue to track the effectiveness of the program through a web-based tracking system.

II. PROMISING STRATEGIES FROM THE 2006 NOMINATIONS

The two honored 2006 PPTW programs represent two very different approaches to improving enrollment of the under-represented gender in nontraditional CTE courses. The NTO Look provides incentives and support to secondary and post-secondary educational institutions to implement research-based programs and systematically evaluate their programs. By contrast, the High-Tech Girls' Society has implemented a research-based program that links hands-on activities with mentoring and outreach programs to encourage girls to consider lucrative high-tech careers. However, both programs, as well as several of the programs nominated for the 2006 PPTW and the 2005 PPTW awards, employed certain common strategies. The following factors tend to be present in a promising or successful program for improving enrollment and completion rates of the under-represented gender in nontraditional courses. The program or practice:

- Implements research-based strategies for improving enrollment and retention of students in nontraditional CTE programs:
- Effectively identifies and builds strong education-community partnerships, interagency coalitions and business partnerships:
- Introduces students to role models, including professionals who have nontraditional careers and peers who participated in nontraditional CTE programs. The role models answer questions, share stories, and frequently interact with and mentor students:
- Provides hands-on opportunities for students to learn about and apply skills:
- Documents the program in a manner that is replicable by others attempting to implement similar programs:
- Centrally coordinates all the schools in a community college or secondary system:
- Measures the outcomes and results of the project by collecting data about the students who participate in the program or benefit from the practice, including whether they have been retained in the field or continued their education in other areas:
- Collects testimonials and seek both positive and negative input from program participants to measure their enthusiasm for the program and make improvements where necessary:
- Expands model programs to other under-served populations that have historically not participated in careers that are nontraditional for their race, disability or socio-economic status:

- Builds upon or cultivates an institutional commitment to gender equity and compliance with civil rights laws and uses the program as an opportunity to train all staff about gender equity;
- Responds to the needs of the local labor market and features high-demand occupations.

III. PROGRESS IS POSSIBLE—IMPLEMENTING PROMISING TECHNIQUES FOR GENDER EQUITY IN CTE

This report describes several methods used to increase enrollment and retention of the under-represented gender in nontraditional CTE. We encourage teachers, administrators, and other education personnel to use these successful strategies to develop programs in their own communities and to experiment with additional new and innovative approaches.¹⁵ We also encourage educators to contact one of the four sponsoring organizations of PPTW to learn more about this year's recognized programs or the multiple approaches described in this report. In addition to providing technical assistance, we may be able to put educators in touch with individuals in their communities who have programs for gender equity.

Of course, some of the above described practices do not require specific funding and simply represent sound educational practices that can be immediately implemented by administrators, counselors and/or teachers. Where funding for initiatives is necessary, however, educators can seek it from a variety of sources. For example, funding may be available from local businesses whose workforce is comprised of occupations that may be nontraditional for one gender. We also recommend that educators and advocates seek funding through their state educational agencies. Advocates can urge schools to fund gender equity programs in CTE in order to bolster compliance with federal and state laws and standards.

Advocates can begin by noting that Perkins III, the federal law that funds and sets standards for CTE, requires states to make progress in improving student participation in and completion of CTE that leads to nontraditional training and employment as one of the four "core indicators" of performance. States have the option of using \$60,000 to \$150,000 of their Perkins III state leadership funds for services that prepare individuals for nontraditional employment. Also, states have the option of reserving and redistributing 10 percent of the Perkins III funds allocated to local education agencies and may require these local agencies to use these redistributed funds for students pursuing nontraditional training.

In addition to Perkins III, there are a number of federal and state antidiscrimination laws that advocates may use to persuade their local schools to take steps to provide nontraditional opportunities. For example, the United States Constitution guarantees that each person will receive the equal protection of the laws and applies to ban sex discrimination by public schools and other government entities.¹⁶ Moreover, the primary federal statute that is relevant in this context is Title IX of the Education Amendments of 1972, which prohibits sex discrimination in all aspects of federally-funded education.¹⁷ Title IX applies to career and technical education programs in public high schools and in private

or public colleges that receive any federal funds. It bars discriminatory actions, including sexual harassment and retaliation, in every aspect of education, and authorizes proactive steps to address under-representation. Finally, many states provide, in addition to federal protection, statutes that address K-12 education, special education, higher education, bullying, teacher certification, civil rights, human rights, hate crimes, affirmative action, and/or public accommodations.

Educators can use these state and federal legal requirements to encourage proactive programs like the NTO Look and High Tech Girls' Society that make strides in improving student participation in fields that are nontraditional for their gender.

IV. CONCLUSION

In today's competitive economy, there is no doubt that the United States will benefit by ensuring full participation of both genders in high-demand, high-skill fields. We hope that this report will support and expand meaningful opportunities for educators and administrators to enable students to identify and follow their interests and create options for them to enroll in courses and programs that are nontraditional for their gender. We encourage educational agencies to adopt practices that incorporate the successful strategies described in this report and to develop unique practices of their own. To support educators and provide them with resources, ACTE, NAPE, NASDCTE, and NWLC will continue to collect and disseminate information on promising techniques for promoting gender equity in CTE courses. Please consult the Appendix for additional innovative programs to watch that incorporate many of the successful strategies described in the report. We invite educators to share their experiences with us, or to nominate a program for recognition by the 2006-2007 Programs and Practices that Work: Preparing Students for Nontraditional Careers Project.

For more information on the Programs and Practices that Work: Preparing Students for Nontraditional Careers Project or to share information on a CTE gender equity program, please contact one of the following organizations:

Association for Career and Technical Education

The Association for Career and Technical Education (ACTE) is the national professional association for the field of career and technical education. ACTE's membership is composed of teachers, counselors and administrators at the middle school, high school and postsecondary levels

1410 King Street
Alexandria, VA 22314
(703) 683-3111 or 1-800-826-9972
(703) 683-7424 (fax)
www.acteonline.org

National Alliance for Partnerships in Equity

The National Alliance for Partnerships in Equity (NAPE) is a consortium of state and local agencies, corporations, and national organizations that collaborate to create equitable and diverse classrooms and workplaces where there are no barriers to opportunities.

172 Hood Road
P.O. Box 369
Cochranville, PA 19330
(610) 345-9246
(610) 869-4380 fax
www.napequity.org

National Association of State Directors of Career Technical Education Consortium

The National Association of State Directors of Career Technical Education Consortium (NASDCTE^c) was established in 1920 to serve as the professional society of state and territory agency heads responsible for the public career technical education at the secondary, post secondary and adult levels. Since 1920, the association has evolved into a dynamic, member-focused association that is a leader in shaping the future of career technical education.

The Hall of States
444 North Capitol Street, NW
Suite 830
Washington, DC 20001
(202) 737-0303
(202) 737-1106 (fax)
www.careertech.org

NATIONAL WOMEN'S LAW CENTER

The National Women's Law Center is a nonprofit organization that has worked since 1972 to advance and protect women's legal rights. The Center focuses on major policy areas of importance to women and their families, including education, employment, health and reproductive rights, and family economic security—with special attention given to the needs of low-income women.

11 Dupont Circle, NW, Suite 800
Washington, DC 20036
(202) 588-5180
(202) 588-5185 (fax)
www.nwlc.org



APPENDIX A

Methodology for the 2006 Programs and Practices That Work: Preparing Students for Nontraditional Careers Project

To identify innovative programs that are improving students' access to nontraditional CTE courses, ACTE, NAPE, NASDCTEc, and NWLC relied on experts in CTE and in gender equity in education. To be eligible, programs were required to receive funding under the Carl D. Perkins Act of 1998 and to demonstrate an increase in participation in, or completion of, nontraditional CTE programs by students of the under-represented gender. Nominations were required to include an explanation of how the program or practice met criteria related to effectiveness, quality, impact, and documentation.

The four sponsoring organizations chose two independent reviewers representatives for a Review Panel that evaluated the nominations. In 2006, the Review Panel selected one program to receive highest recognition and one program to receive honorable mention. This report features the two recognized programs as well as promising practices by 2005 PPTW honorees and by other programs that are described in more detail in Appendix B.

Each year, recognized programs will be featured at the ACTE, NAPE, and NASDCTEc national conferences. In addition, recognized programs will receive an award at a briefing for the U.S. Congress. The briefing will call Congress' attention to: 1) the continued existence of gender-based barriers in accessing opportunities in high-skill, high-wage CTE training; 2) programs dedicated to eradicating those barriers; and 3) the importance of improving gender equity provisions and funding for gender-based initiatives in federal law. Finally, the recognized programs will be featured in a report describing promising practices for improving enrollment in and completion of CTE that is nontraditional for a student's gender. This is the second of these reports.

ACTE, NAPE, NASDCTEc, and NWLC salute the initiatives by all nominees and encourage this year's nominees who were not selected to re-apply.

APPENDIX B

PROGRAMS TO WATCH

As the full Report illustrates, the NTO Look and the High Tech Girls' Society highlight effective practices for improving students' enrollment in, and completion of, nontraditional CTE courses. But we received applications from many new, innovative programs that also warrant discussion. We will watch the progress of these programs as they continue to evolve, and collect data on their ability to improve recruitment and retention of students in CTE programs that are nontraditional for their gender.

- ◆ **Central Community College: CyberCamp4Girls.** CyberCamp4Girls is a three-day career exploration camp funded by a Nebraska Department of Education Perkins grant. The camp is designed to recruit young women into nontraditional information technology courses. The camp allows the students to engage in a number of hands-on activities, ranging from constructing cellular phone interfaces and wireless antennas, to designing computer games and even a kiosk program to highlight their camp activities. The students in the camp also learn about employment opportunities in the information technology field. In 2005, nearly 60 students attended the camp at the Central Community College Campuses in Columbus, Grand Island, and Hastings, Nebraska.
- ◆ **Southwest Area Career Center: New Traditions Upward Program (NT UP).** NT UP is a recruitment program that provides eighth grade students with opportunities to explore and prepare for education and job opportunities that are nontraditional for their gender. A central component of NT UP is the "Careers Have No Gender" presentation. The Southwest Area Career Center uses the presentation to provide information regarding nontraditional careers. Building on the presentation, NT UP also allows students to engage in hands-on activities side-by-side with male and female high school students at the career center.

Each year, the number of students interested in participating in NT UP has increased. In 2003-2004, 418 students indicated an interest in NT UP, and 196 were placed in the program. In 2005-2006, 875 students indicated an interest in NT UP and 286 were placed in the program. Because NT UP was first piloted in 2003-2004, the student population has not yet reached the age in which it is eligible for programs at the South Area Career Center. However, tools are in place for tracking nontraditional enrollment and completion of this population of students when they are eligible for secondary career education programs.

- ◆ **University of Hawai'i System community colleges and Office of the State Director for Career and Technical Education (OSDCTE): Nontraditional Incubation Project (NT Inc.).** NT Inc. provides the groundwork to encourage each of the Hawai'i community college campuses to set priorities and activities to recruit and retain students in nontraditional CTE programs. In light of the diversity of the Hawai'i Islands, there was no attempt to require the campuses to implement a uniform project; instead NT Inc.

developed a template that each campus could use to design its own community-based program. Each community college campus committed to developing a plan of activities and a budget to meet the recruitment and retention needs of their campus. Activities ranged from mentorship programs and support for nontraditional student participation at industry conferences or trade shows, to implementing classroom strategies that supported nontraditional students. Most campus plans also included the development of additional recruitment materials, including posters, brochures, and web site enhancements.

Initial data analysis shows that these programs may have had some impact on Hawaii's improvement in its level of performance for the Fourth Core Indicator. NT Inc. expects to see even greater improvement in 2006 and believes that Hawaii's performance will have gone from "did not meet" to "exceed." Moreover, anecdotally, programs are seeing increased interest from nontraditional students. NT Inc. is continuing to track its progress and new enrollment and completion statistics will be available this fall.

ENDNOTES

¹ NATIONAL ASSESSMENT OF VOCATIONAL EDUCATION: FINAL REPORT TO CONGRESS (2004).

² *Ibid.*

³ CARL D. PERKINS VOCATIONAL AND TECHNICAL EDUCATION ACT REPORT TO CONGRESS ON STATE PERFORMANCE, PROGRAM YEAR 2003-2004 (Sept. 2005); US DEPT OF EDUCATION, OFFICE OF VOCATIONAL AND ADULT EDUCATION.

⁴ E.g., Andrew Ryan, *Vocational Education: 'It's Not Your Grandfather's Trade School.'* BOSTON GLOBE, April 23, 2006.

⁵ See NATIONAL ASSESSMENT OF VOCATIONAL EDUCATION: REPORT TO CONGRESS (1994). In addition, a 1998 University of Michigan study reported that a quality CTE program can reduce a school's dropout rate by as much as 6%. James A. Kulik, *Curriculum Tracks and High School Vocational Studies*. UNIVERSITY OF MICHIGAN (1998) (as cited in the Southern Regional Education Board, *Facts About High School Career/Technical Studies*). See also Stephen Planks, *Career and Technical Education in the Balance*. NATIONAL RESEARCH CENTER FOR CAREER AND TECHNICAL EDUCATION (2001) (A mixture of CTE and academic courses reduces the likelihood that students will drop out, particularly for low performing students.).

⁶ Moreover, a recent report found that students who concentrate in CTE are taking more and higher levels of math and science when compared with general students. James R. Stone, *Research to Practice*. THE NATIONAL RESEARCH CENTER FOR CAREER TECHNICAL EDUCATION (2003).

⁷ Nancy Kober & Diane Stock Rentner, *Do you Know the Good News about American Education?*. CENTER ON EDUCATION POLICY AND AMERICAN YOUTH POLICY FORUM (2000), available at www.aypf.org/whatsnew.htm. In addition, the 2004 National Assessment of Vocational Education Final Report states that CTE student college attendance increased by nearly 32 percent between 1982 and 1992. NATIONAL ASSESSMENT OF VOCATIONAL EDUCATION: FINAL REPORT TO CONGRESS at 105.

⁸ College Board, *AP Program Summary Report 2005* available at http://apcentral.collegeboard.com/repository/programsummaryreport_47033.pdf.

⁹ See, e.g., Maria Carmen C. Sanogo, *Facilitators and Barriers to High School Female Participation in School-to-Work: Traditional vs. Nontraditional Programs for Females* (1995) (unpublished manuscript, thesis for Pennsylvania State University Graduate Program in Vocational Instructional Education, on file with the National Women's Law Center); See AMERICAN ASSOCIATION OF UNIVERSITY WOMEN EDUCATIONAL FOUNDATION: COMMISSION ON TECHNOLOGY, GENDER, AND TEACHER EDUCATION, *TECH-SAVVY: EDUCATING GIRLS IN THE NEW COMPUTER AGE 44* (2000) citing JANET SCHOFIELD, *COMPUTERS AND CLASSROOM CULTURE* (1995) (boys refer to girls' femininity and appearance in elementary and secondary computer science classes, distracting girls from their work); Susan Giurleo, *Persisters and Career Changers in Technical Careers: Are there Gender Differences?* in DIVERSITY AND WOMEN'S CAREER DEVELOPMENT: FROM ADOLESCENCE TO ADULTHOOD 85, 81-94 (Helen S. Farmer ed. 1997) (female high school student interested in a science career stopped taking science classes and pursued a technical career after her chemistry teacher repeatedly touched her breasts in class); MARY GATTA AND MARY TRIGG, *BRIDGING THE GAP: GENDER EQUITY IN SCIENCE, ENGINEERING AND TECHNOLOGY* (2001) (report for the New Jersey Employment and Training Commission's Council on Gender Parity in Labor and Education).

¹⁰ Wage data is from May 2005. Annual wages have been calculated by multiplying the hourly median wage by a “year-round, full-time” figure of 2,080 hours; for those occupations where there is no published hourly median wage, the annual wage has been directly calculated from the reported survey data. BUREAU OF LABOR STATISTICS, U.S. DEPARTMENT OF LABOR, OCCUPATIONAL EMPLOYMENT AND WAGES (May 2005) available at http://www.bls.gov/oes/oes_dl.htm#2005_m (last visited Jun. 5, 2006).

¹¹ Data on fastest-growing occupations is from New Jersey Department of Labor, *State of New Jersey: Occupations With the Greatest Percentage Growth, 2004-2014*, available at http://www.wnjin.net/OneStopCareerCenter/LaborMarketInformation/lmi04/state/pergrow_occ.xls (last visited Jun. 7, 2006). BUREAU OF LABOR STATISTICS, U.S. DEPARTMENT OF LABOR, OCCUPATIONAL EMPLOYMENT AND WAGES (May 2005) available at http://www.bls.gov/oes/oes_dl.htm#2005_m (last visited Jun. 5, 2006).

¹² *Ibid.*

¹³ One example of a highly effective, community-based collaboration is the partnership between the Illinois Easter Education for Employment Region, Lake Community College, Sarah Bush Lincoln Health Center, and St. Anthony’s Memorial Hospital to distribute “Are You Man Enough to Be a Nurse” posters.

¹⁴ Support for the High Tech Girls Society is provided by a grant from the U.S. Department of Education (USDE). The contents of this document do not necessarily represent the policy of the USDE, and you should not assume endorsement by the federal government. The USDE grant supports approximately 7.1% of the budget for the High Tech Girls Society. This is based on the current total budget for the Minneapolis Public Schools Career and Technical Education programs and the amount of WEEA funding provided by the USDE.

¹⁵ All efforts to reduce under-representation of students of one gender in particular courses or programs must comply with relevant federal and state legal standards.

¹⁶ U.S. CONST., amend. XIV, §1; *United States v. Virginia*, 518 U.S. 515 (1996). Although detailed discussion of the Equal Protection Clause is beyond the scope of this Report, public school students may enforce their constitutional right to be free from sex discrimination in education through private lawsuits.

¹⁷ 20 U.S.C. § 1681 *et seq.*