Building New Possibilities:

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

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

A joint project sponsored by:

The Association for 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

Building New Possibilities

This report describes promising practices for improving students' access to career and technical education (CTE) programs that are nontraditional for their gender. It highlights the practices utilized by this year's and prior year's winners of the "Programs and Practices That Work: Preparing Students for Nontraditional Careers" Project award. This year's recognized program is the GirlTech Program at Francis Tuttle Technology Center in Oklahoma City, Oklahoma.

The Programs and Practices That Work (PPTW) Project was created in 2005 by the Association for 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. Over the past four years, we have recognized many important programs that deserve attention and replication. Yet much work remains to be done, as girls and boys continue to be vastly underrepresented in programs nontraditional for their gender. This report highlights some promising practices and strategies that work, and offers lessons for policymakers, educators, and administrators as we move forward, building new possibilities for girls and boys in education.

Educators and administrators are encouraged to implement programs and practices that incorporate the promising techniques that we have identified over the past four years:

- 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; and

- 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.

Please see our websites for more information and guidance on how you can improve gender equity in your school.

I. INTRODUCTION

June 23, 2009 marked the thirty-seventh anniversary of the enactment of Title IX, the landmark legislation that mandates equal opportunity for women and girls in all aspects of education. But despite the tremendous gains women and girls have made in education over the past thirty-seven years, girls continue to be the vast majority of those who enroll in traditionally female career and technical education courses, such as cosmetology, child care and health services. 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 for girls and boys. 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. Moreover, all students lose out when artificial barriers prevent students from pursuing careers that match their interests and abilities.

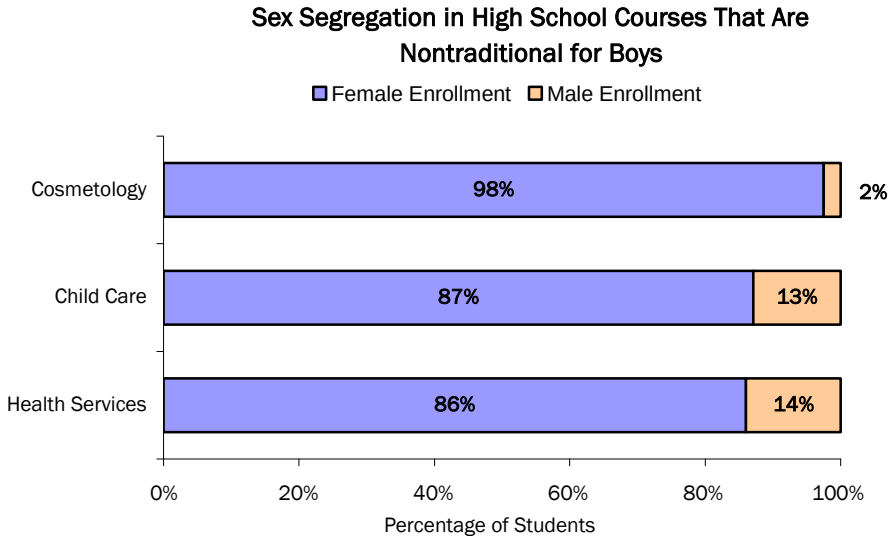
In an increasingly competitive and global economy, the factors that create real barriers to student participation in fields that are nontraditional for their gender cannot be ignored. This report recognizes one program that has implemented promising approaches for encouraging students to explore nontraditional training and employment. The GirlTech mentoring program at Francis Tuttle Technology Center in Oklahoma City has significantly increased girls' exposure to, enrollment in, and pursuit of college degrees in technology and engineering. By pairing girls with professional female role models in the community and building a strong community of girls at the Pre-Engineering Academy and other programs, GirlTech provides peer and institutional support and guidance for girls preparing to enter traditionally male dominated fields. These supports not only aid girls during their time at the Pre-Engineering Academy, where girls are sorely underrepresented, but also help them build the skills and confidence they need to enter rigorous college programs in technology, and, beyond that, careers in nontraditional fields.

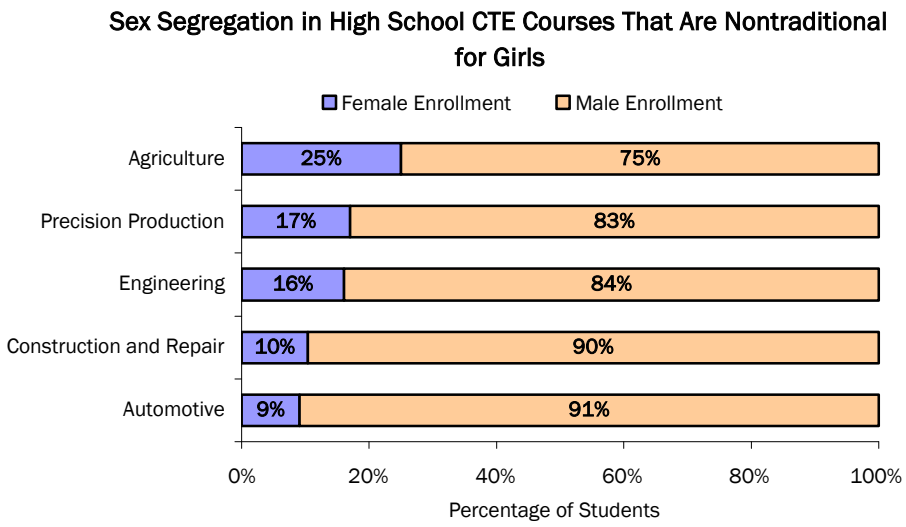
Background on Career and Technical Education. Career and technical education ("CTE"), formerly known as vocational education, makes up a significant portion of both secondary and postsecondary education in the United States. Over 95% of high school students take at least one CTE course, and about one-quarter 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 postsecondary 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 15.6 million students were enrolled in CTE in 2006-07—an increase of 62.5% 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 rate[5] 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 postsecondary 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 37 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, which detail enrollment data from 2002-2003 and 2003-2004, demonstrate the disproportionate enrollment patterns of male and female students in CTE courses that are nontraditional for their gender.





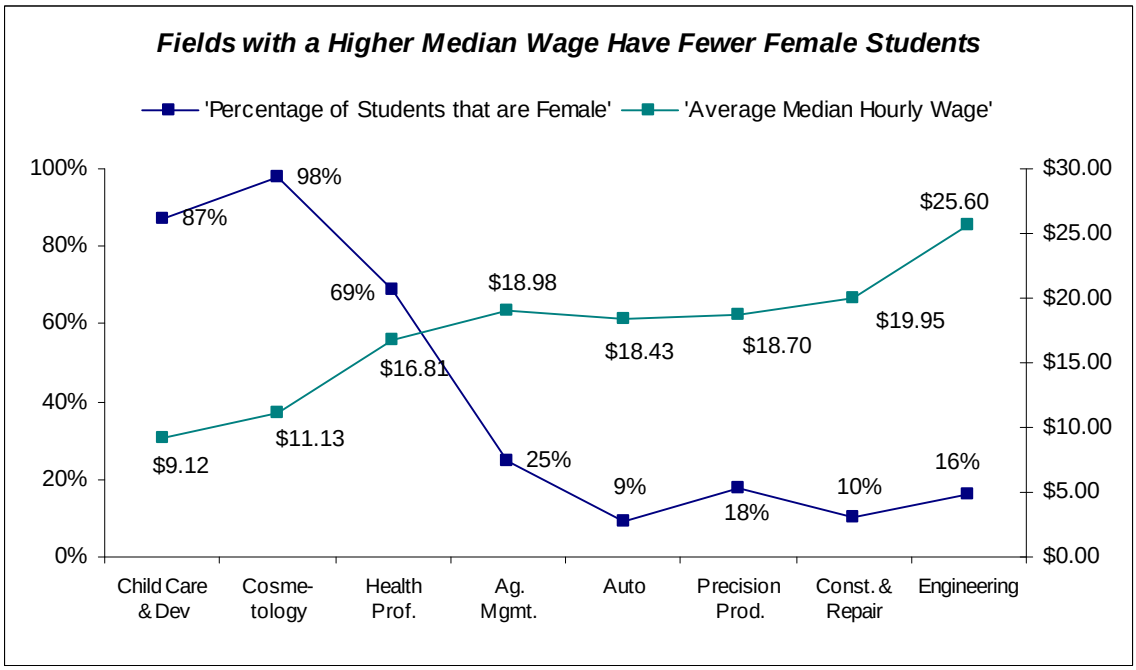
In fact, the most recent available data show that the level of under-representation of women in CTE fields that are nontraditional for their gender has remained virtually unchanged since 1979. High school girls also continue to be under-represented in critical math and science fields as well. In 2008, girls made up only 31% of students taking AP physics exams and only 17% 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. Unemployment rates for both men and women are rising nationwide,[10] but women are particularly vulnerable because they may have fewer savings to fall back on if they lose their job.

And women are more likely than men to have received subprime mortgage loans, in part because of their lower earnings.[11] 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 an average median hourly wage of $19.62, while the traditionally female fields pay just $15.32 on average. This translates into a median annual salary of $40,819 for men and $31,873 for women—a $8,946 wage gap.[12] 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.[13]



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.[14]

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 for 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 sponsor 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.

This Report, the fourth to be issued since 2005, highlights the program selected for recognition in 2009 and features promising practices for gender equity in CTE programs. This 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 2009 HONORED PROGRAM – *GirlTech, Francis Tuttle Technology Center, Oklahoma City, Oklahoma*

For 2009, ACTE, NAPE, NASDCTEc, and NWLC have selected one program for PPTW recognition, the GirlTech Program at Francis Tuttle Technology Center in Oklahoma City. GirlTech's comprehensive mentoring program has bolstered the recruitment and retention rate of girls studying and pursuing careers in technology and engineering.

Since its inception in 2005, the GirlTech Program has supported girls enrolled at Oklahoma City's flagship science and technology campuses. GirlTech primarily works with students enrolled in the Pre-Engineering Academy at the Center, but has also expanded its program to reach girls in the graphic arts, biosciences and computer science curricula.

Through a rigorous selection process, GirlTech administrators recruit professional female engineers and scientists from the Oklahoma City community to serve as year-long, and often multi-year, mentors for ninth through twelfth graders. The mentoring program begins with an initial event at the start of the school year, where students meet their mentor and become oriented with the program. Mentees and mentors then communicate by email, ideally at least once a week and in some cases more frequently. These informal conversations allow the mentors to provide career advice, learn about the challenges facing women in nontraditional careers, or simply help with a particularly challenging homework assignment.

GirlTech participants also take part in skill-building events throughout the year; this year, for example, the students attended workshops on "confident communications," networking, and resume building. Each May the program holds an annual GirlTech Recognition Ceremony where graduating seniors are honored and a professional from the community speaks about the challenges and rewards of entering nontraditional fields.

The program has proved to be an important resource for girls deciding to pursue college programs in engineering and technology. All but one of GirlTech students graduating from the Pre-Engineering Academy between 2005 and 2008 declared engineering or a technical field as her college major. One former participant credited her three-year mentor for her decision to enroll in a university engineering program, noting that her relationship with her mentor was "one of the best things that happened to me in high school and I think she and I will be life-long

friends." Another GirlTech graduate credited her mentor for encouraging her to apply to the Massachusetts Institute of Technology, where she is now on a full scholarship.

III. HIGHLIGHTS FROM PRIOR YEARS

Like the GirlTech program, a number of programs we have recognized over the past four years have made great strides in increasing access to girls and boys for careers nontraditional for their gender. Programs we have recognized in the past include:

Seattle Public Schools IGNITE Program, Washington (2007 Honoree)

Prior to 2000, girls made up only a handful of students in Seattle high school technology courses. But after seven years of the IGNITE Program, girls made up a substantial amount of the students in technology courses and in some cases they filled half of the seats in technology classrooms. Since 2000, the IGNITE program had connected over 10,000 Seattle high school girls with women in technology careers. By developing personal connections between the girls and the women, the program inspired girls throughout Seattle to overcome barriers to their participation in technology courses.

St. Paul College, Minnesota (2007 Honoree)

St. Paul College engaged in aggressive recruiting to attract more men to the health care profession, and respiratory care in particular. The number of men enrolled in the respiratory care program at St. Paul College increased dramatically in only a four year period. In 2002, men made up only 5 participants in the respiratory care program. That number jumped to 88 participants in 2006 (out of a total 169 enrolled students).

Northeast Community College, Nebraska (2007 Honoree)

In 2005, Northeast Community College added a mentoring program to its efforts to recruit and retain students in nontraditional fields. The College provided a range of support services for students studying in fields that are nontraditional for their gender, including career planning, individual counseling, scholarships, and financial assistance to students for support services, such as childcare, mileage tuition, and textbooks.

Minneapolis Public Schools High Tech Girls' Society, Minnesota (2006 Honoree)

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 implemented a rigorous academic and technical curriculum through after-school, hands-on learning activities, tours, seminars and other related school activities. Mentoring was essential to the program, and the HTGS connected the girls with women employed in high-tech fields, provided access to professional organizations that support women in high-tech careers, and presented opportunities to meet and network with other young women with similar interests in Minneapolis high schools.

Minot Public Schools CTE Programs, North Dakota (2005 Honoree)

Minot Public Schools CTE programs included regular opportunities for students to explore nontraditional careers. Over a three year period, Minot Public Schools sponsored two career and skills awareness days—"DIVA Tech" and "Define Your Dreams"—and one technology camp—"Technology on the Go." These programs were designed to expose students to nontraditional courses and had made significant progress in increasing enrollment of the under-represented gender in these courses. Over the three years that it offered programs at Minot Public High School, enrollment in classes that were nontraditional for students' gender increased by 32 percent.

For more information on these and other programs honored in past years see prior PPTW reports at http://nwlc.org/details.cfm?id=2775&section=education.

IV. PROMISING STRATEGIES FROM 2009 AND PRIOR YEARS

Over the four years of the PPTW program, a number of themes have emerged that unite the many promising practices and stories of success we have heard from throughout the country for improving enrollment and completion rates of the under-represented gender in nontraditional courses. The following key factors tend to be present in a promising or successful program. 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; and

- Responds to the needs of the local labor market and features high-demand occupations.

III. PROGRESS IS POSSIBLE—IMPLEMENTING PROMISING TECHINIQUES FOR GENDER EQUITY IN 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 program, past 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 the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV), the 2006 federal law that funds and sets standards for CTE, requires state and local recipients of federal funds to make progress in improving student participation in and completion of CTE that leads to nontraditional training and employment as part of the accountability system. Moreover, local recipients of Perkins dollars must use funds on activities that prepare special populations, including students training in nontraditional fields, for CTE programs for high skill, high wage or high demand occupations that will lead to self-sufficiency.

In addition to Perkins IV, 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 GirlTech, or the programs we have recognized in the past 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, NASDCTEc, and NWLC will continue to collect and disseminate information on promising techniques for promoting gender equity in CTE courses. We invite educators to share their experiences with us.

APPENDIX

Methodology for the 2009 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 Career and Technical Education Act of 2006 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 a detailed explanation of how the program or practice met criteria related to effectiveness, quality, impact, and documentation.

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, to be held this year on July 28th, 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 fourth of these reports.

ENDNOTES

[1] U.S. Department of Education, NATIONAL ASSESSMENT OF VOCATIONAL EDUCATION: FINAL REPORT TO CONGRESS (2004), *available at* http://www.ed.gov/rschstat/eval/sectech/nave/index.html.

[2] *Id.*

[3] U.S. Department of Education, Office of Vocational and Adult Education, CARL D. PERKINS VOCATIONAL AND TECHNICAL EDUCATION ACT OF 1998: REPORT TO CONGRESS ON STATE PERFORMANCE, PROGRAM YEAR 2006-07 (Sept. 2008), *available at* http://www.ed.gov/about/offices/list/ovae/resource/perkinsrpt0607.pdf.

[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* http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/16/2d/ce.pdf. 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, *supra* note 1 at 105.

[8] College Board, *AP Program Summary Report 2008, available at* http://professionals.collegeboard.com/profdownload/ap-data-2008-Program-Summary-Report.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] U.S. Department of Labor, Bureau of Labor Statistics, *The Employment Situation: March 2009, Table A-1* (April 3, 2009), available online at http://www.bls.gov/news.release/empsit.nr0.htm.

[11] Allen Fishbein and Patrick Woodall, Consumer Federation of America, *Women are Prime Targets for Subprime Lending* (December 2006).

[12] Wage data is from May 2008. 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 2008) *available at* http://www.bls.gov/oes/oes_dl.htm#2008_m (last visited July 24, 2008).

[13] 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.wnjpin.net/OneStopCareerCenter/LaborMarketInformation/lmi04/state/pergrowocc.xls (last visited Jun. 7, 2006). BUREAU OF LABOR STATISTICS, U.S. DEPARTMENT OF LABOR, OCCUPATIONAL EMPLOYMENT AND WAGES (May 2005) *available a*t http://www.bls.gov/oes/oes_dl.htm#2005_m (last visited Jun. 5, 2006).

[14] *Id.*

[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*.

Association for Career and Technical Education

The Association for Career and Technical Education (ACTE) is the nation's largest not-for-profit education association dedicated to the advancement of education that prepares youth and adults for successful careers. It provides advocacy, public awareness and access to information, professional development and tools that enable members to be successful and effective leaders. Founded in 1926, ACTE has more than 29,000 members including teachers, counselors and administrators at the middle school, high school and postsecondary levels.

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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.

P.O. Box 369
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National Association of State Directors of Career Technical Education Consortium

The National Association of State Directors of Career Technical Education Consortium (NASDCTEc) 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.

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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.

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