



**Public Advocate for the City of New York**

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# **BLUE SCHOOL, PINK SCHOOL**

## **Gender Imbalance in New York City CTE High Schools**

**A REPORT BY PUBLIC ADVOCATE BETSY GOTBAUM  
JANUARY 2008**

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# **Office of the New York City Public Advocate**

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**THANKS TO:**

**The National Women's Law Center**

## EXECUTIVE SUMMARY

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Career and Technical Education (CTE) is a tool that can help young men and women avoid the limitations of low-wage jobs. CTE programs provide students with technical and work-based skills while simultaneously promoting academic achievement. Evidence suggests that CTE programs help engage students and reduce school dropout rates.<sup>1</sup> CTE programs also prepare students for post-secondary vocational programs in growth industries including healthcare, automotive maintenance, and the construction trades.<sup>2</sup>

Unfortunately, young women are not equally represented in CTE programs. The overall enrollment in New York City high schools is approximately 49 percent male and 51 percent female.<sup>3</sup> Average enrollment in the 18 high schools on the Department of Education's list of CTE-designated schools, however, is nearly 59 percent male and 41 percent female.<sup>4</sup> The gender imbalance within individual schools is greater.

- 6 of the 18 schools are more than 75 percent male
- 11 of the 18 schools are more than 55 percent male
- 5 of the 18 schools are more than 55 percent female
- 1 school is more than 75 percent female

Of the six schools with the greatest gender imbalance, five favor male enrollment. These five schools offer programs in the aviation, automotive maintenance, and construction trades,<sup>5</sup> predicted growth industries for New York City with high-wage potential and secure careers.<sup>6</sup>

The Office of the Public Advocate recommends that the New York City Department of Education take the following steps in order to achieve gender balance in its CTE schools:

- Increase recruitment and retention of females in programs that are nontraditional for their gender
- Provide more math and science AP classes in predominantly female schools
- Provide admissions data disaggregated by gender
- Ensure that all CTE schools have a designated sex equity coordinator
- Conduct district-by-district compliance reviews in advance of the biennial reviews conducted by the New York State Education Department.
- Make schools' written compliance plans available on the DOE website

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<sup>1</sup> Southern Regional Education Board, "Facts About High School Career/Technical Studies," [www.sreb.org/programs/hstw/career/Facts\\_About\\_HS\\_Career.pdf](http://www.sreb.org/programs/hstw/career/Facts_About_HS_Career.pdf).

<sup>2</sup> Fischer, D., Center for an Urban Future, *Chance of a Lifetime*, May 2006.

<sup>3</sup> New York City Department of Education, *The Class of 2006 Four-Year Longitudinal Report and 2005-2006 Event Dropout Rates*, May 2007.

<sup>4</sup> New York City Department of Education <http://schools.nyc.gov/default>.

<sup>5</sup> Male enrollment: Alfred E. Smith High School, 88%; Automotive CTE High School, 95%; Aviation CTE High School, 85%; W.E. Grady CTE High School, 81%; Transit Technology CTE High School, 80%.

<sup>6</sup> See 2, pp. 14-22.

## INTRODUCTION

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Career and Technical Education (CTE) is a tool that can help high school girls avoid the limitations of low-wage jobs. CTE programs provide students with technical and work-based skills while simultaneously promoting academic achievement. Girls can find motivation to complete high school in the prospect of gaining skills that will be applicable both in post-secondary academic settings and in stable, high-paying jobs.

CTE programs have increasingly become an attractive option for students seeking a post-secondary education while continuing to provide occupational training for students interested in entering the workforce immediately after high school graduation. Ninety-seven percent of high school students nationwide take at least one vocational education course and nearly half enroll in a CTE program of study.<sup>7</sup> Evidence suggests that CTE programs help engage students and reduce school dropout rates.<sup>8</sup>

CTE programs also prepare students for post-secondary programs in growth industries including healthcare, automotive maintenance, and the construction trades.<sup>9</sup> It is expected that one in every three of the fastest growing occupations will require an associate's degree or post-secondary vocational certificate, according to a 2004 U.S. Department of Labor Bureau of Labor Statistics report.<sup>10</sup>

Unfortunately, young women are not equally represented in CTE programs, especially those that prepare students for higher-paying occupations. In a 2001 letter to then-Schools-Chancellor Harold Levy, the National Women's Law Center (NWLC) noted that, of the 18 technical high schools in New York City, 13 were highly sex-segregated and the schools with predominantly male enrollment offered programs leading to a wider range of career opportunities—including many programs that prepare students for high-wage work—than the schools with predominantly female enrollment.<sup>11</sup> Little progress has been made in correcting these inequities in the intervening years.

Pursuant to the New York City Charter, the Public Advocate is charged with reviewing the programs, operations, and activities of city agencies and is required to have timely access to information which she deems necessary to complete the investigations, inquiries, and reviews required by the Charter.<sup>12</sup> In November 2006, the Office of the Public Advocate issued "Help Wanted: Department of Education Missing Opportunities to Connect Students with Health Care

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<sup>7</sup> U.S. Department of Education, *National Assessment of Vocational Education, Final Report to Congress*, 2004.

<sup>8</sup> Southern Regional Education Board, "Facts About High School Career/Technical Studies,"

[www.sreb.org/programs/hstw/career/Facts\\_About\\_HS\\_Career.pdf](http://www.sreb.org/programs/hstw/career/Facts_About_HS_Career.pdf).

<sup>9</sup> Fischer, D., Center for an Urban Future, *Chance of a Lifetime*, May 2006.

<sup>10</sup> The Association for Career and Technical Education, "What Is Career and Technical Education?,"

[www.acteonline.org/career\\_tech/upload/CTUFactSheet.doc](http://www.acteonline.org/career_tech/upload/CTUFactSheet.doc).

<sup>11</sup> National Women's Law Center, Letter to Chancellor Harold O. Levy, New York City Board of Education, August 16, 2001.

<sup>12</sup> New York City Charter §24.

Careers,” a report calling on the New York City Department of Education (DOE) to shepherd more of its healthcare CTE programs through the state certification process. In May 2007, the Office of the Public Advocate issued a white paper highlighting the track record of the city’s state-certified CTE programs. Along with these efforts, the Office of the Public Advocate initiated an investigation to assess the degree of gender imbalance in the city’s CTE high schools and the implications of this imbalance.

## BACKGROUND

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### *Status of Women and Girls in New York City*

Women are overrepresented in low-paying jobs. In 2000 and 2001, an average of nearly 53 percent of New York City’s low-wage earners—those making less than \$8.10 per hour—were women.<sup>13</sup> From 1999 through 2001, 57 percent of the city’s employed single mothers were in the service industry, which offers among the lowest wages.<sup>14</sup>

For New York City’s young people, securing a job at any wage level can be a challenge. Despite three full years of economic recovery, there has been no decline in the teen unemployment rate from its recession-related high of 28.7 percent in 2003. Slightly less than two-thirds (65.4 percent) of 16-to-24-year-old city residents did not hold a job in 2006.<sup>15</sup>

Young women are less likely to find employment than their male counterparts. In 2006, less than 33 percent of women 16 through 24 were employed, (a decline of more than five points since 2003). More than 36 percent of males in the same age group were employed in 2006 (an increase of more than one point since 2003).<sup>16</sup>

For many young women, unemployment is only part of a larger set of problems. In 2000, the city was home to nearly 140,000 youth between the ages of 16 and 24 who were disconnected—neither in school nor the labor force. Fifty-five percent of these disconnected youth were female.<sup>17</sup> Nearly half of these young women had not completed high school or earned a GED; more than four in ten were living in poverty; one in every three was a mother living with her child. Half of these mothers were single.<sup>18</sup> The poverty rate for single-female-headed households is 41 percent, compared to 11 percent for married couples with children.<sup>19</sup>

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<sup>13</sup> Levitan, M. and Gluck, R., The Community Service Society of New York, *Who Needs a Living Wage? A Living Wage Law Would Increase Earnings for New York City's Most Disadvantaged Workers*, April 2002.

<sup>14</sup> Levitan, M. and Gluck, R., The Community Service Society of New York, *Mothers' Work: Single Mothers' Employment, Earnings and Poverty in the Age of Welfare Reform*, 2002.

<sup>15</sup> Levitan, M., The Community Service Society of New York, *Unemployment and Joblessness in New York City, 2006*, 2007: p. 1.

<sup>16</sup> Commission for Economic Opportunity, “Increasing Opportunity and Reducing Poverty in New York City,” September 2006: pp. 13-15. [www.nyc.gov/html/om/pdf/ceo\\_report2006.pdf](http://www.nyc.gov/html/om/pdf/ceo_report2006.pdf)

<sup>17</sup> See 9, p. 4.

<sup>18</sup> Levitan, M., The Community Service Society of New York, *Out of School, Out of Work . . . Out of Luck? New York City's Disconnected Youth*, January 2005.

<sup>19</sup> See 16, p. 8.

By 2003, the number of disconnected youth in New York City had reached 170,000.<sup>20</sup> Current estimates put the number closer to 200,000.<sup>21</sup> For these youth, additional education can decrease the likelihood of living in poverty. For example, among those who graduate high school or obtain a GED, the poverty rate drops to 17 percent.<sup>22</sup>

### ***NYC Women in High-Wage Fields***

In 2006, workers in computer, maintenance and repair, and construction occupations in New York City had median annual earnings of approximately \$70,000, \$45,000, and \$33,000, respectively.<sup>23</sup> Women, however, held less than 25 percent of all computer jobs, less than 5 percent of maintenance jobs, and only slightly more than 1 percent of construction jobs.<sup>24</sup>

Conversely, women held more than 68 percent of personal care and support jobs and nearly 90 percent of healthcare support jobs—occupations that offered median earnings of only about \$22,000 and \$26,000 respectively.<sup>25</sup> Although service occupations such as healthcare support and personal care are vital to New York City, they currently offer low wages. Young women therefore should be encouraged to seek educational training leading to stable careers and economic self-sufficiency.

With its emphasis on both high academic standards and work-based skills, CTE offers female students an opportunity to prepare for trades that offer wages of \$20-to-\$30 per hour, on-the-job training, pensions, and healthcare benefits through union membership.<sup>26</sup> Giving more women the training they need to pursue careers in such fields would help narrow the earnings gap between genders and enable more women to achieve economic self-sufficiency.<sup>27</sup>

### ***Female Participation in CTE***

The DOE operates 69 CTE programs in more than 150 high schools and CTE training centers.<sup>28</sup> Of the 18 CTE-designated high schools with at least one state-certified program in New York City, 15 offer at least one program that is aligned with one of the following high-growth industries: healthcare, construction trades, automotive maintenance, science and technology, and aviation.

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<sup>20</sup> See 19, p. 3.

<sup>21</sup> See 9, p. 3.

<sup>22</sup> See 16, p. 12

<sup>23</sup> New York State Department of Labor,

[www.labor.state.ny.us/workforceindustrydata/apps.asp?reg=nyc&app=wages](http://www.labor.state.ny.us/workforceindustrydata/apps.asp?reg=nyc&app=wages).

<sup>24</sup> U.S. Census Bureau, 2006 American Community Survey, “S2402. Occupation by Sex and Median Earnings in the Past 12 Months (in Inflation-Adjusted Dollars) for Full-Time, Year-Round Civilian Employed Population 16 Years and Over.”

<sup>25</sup> *Ibid.*

<sup>26</sup> Chicago Women in Trades, [www.chicagowomenintrades.org/artman/publish/article\\_158.shtml](http://www.chicagowomenintrades.org/artman/publish/article_158.shtml).

<sup>27</sup> Chicago Women in Trades, *Tradeswomen of Tomorrow: An Educator’s Guide to Nontraditional Career Awareness for Girls*, 1999.

<sup>28</sup> New York City Department of Education (DOE), <http://nyccte.com/nycctenew/aboutcte.asp>.

CTE schools have low female enrollment and significantly lower levels of participation in programs that are nontraditional<sup>29</sup> for their gender, such as automotive repair, technology, and the construction trades. Research shows that the reluctance of girls to participate in such programs is rooted in stereotypes of male and female roles that are imparted early in childhood.<sup>30</sup> Additionally, young girls are not sufficiently encouraged to participate in math, science, and technology education, placing them at a disadvantage when pursuing educational opportunities that lead to high-skill, high-wage occupations. Career guidance based on a student's pre-existing interests rather than aptitude or career exploration can also contribute to gender-based educational and career choices.<sup>31</sup>

Females face additional barriers to success, including gender isolation issues, once they enter CTE programs that are nontraditional for their gender. Program completion can be challenging if students lack mentoring, support groups, or a cohort of students of the same gender to help them integrate into the school environment.<sup>32</sup>

### ***History of Female CTE Participation in NYC***

According to the NWLC's 2001 letter to then-Chancellor Levy, a history of legal discrimination against girls with regards to vocational education dates back to 1909 when the Board of Education, in authorizing the city's first vocational schools, prohibited boys and girls from being educated in the same building. Exceptions were made in special cases but only on the condition that boys and girls attend separate classes. Decades of compliance with this policy and *de facto* gender segregation led to a persistent lack of female participation in CTE.<sup>33</sup>

In 1982, the State Education Department cited the New York City school system for violations of Title IX in its vocational schools.<sup>34</sup> In response, the Board of Education entered into compliance agreements to increase female enrollment in programs nontraditional for their gender, improve retention and completion rates, and eliminate discriminatory practices. In the following years, the number of female students at traditionally male schools began to increase, but progress eventually leveled off.<sup>35</sup> In 2000, the Board of Education Task Force on Sex Equity found that a significant gender imbalance remained in the city's CTE high schools,<sup>36</sup> the imbalance remains significant to the present day. In 2001, the NWLC called the situation a violation of Title IX, the

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<sup>29</sup> The U.S. Department of Labor defines nontraditional occupations as jobs in which one gender makes up less than 25 percent of the total number of workers.

<sup>30</sup> Lufkin, M., U.S. Department of Education, Office of Vocational and Adult Education, *Root Causes for Nontraditional Participation*, [www.napequity.org/pdf/Root%20Causes%20.pdf](http://www.napequity.org/pdf/Root%20Causes%20.pdf).

<sup>31</sup> *Ibid*, p. 1.

<sup>32</sup> *Ibid*, p. 9.

<sup>33</sup> National Women's Law Center, Letter to Chancellor Harold O. Levy, New York City Board of Education, August 16, 2001.

<sup>34</sup> Title IX of the Education Amendments of 1972 (20 U.S.C. §1681) prohibits sex discrimination in all aspects of a federally funded educational program or activity. In regard to admissions to educational institutions, this section applies to CTE programs in public secondary and public or private post-secondary schools receiving federal funds.

<sup>35</sup> See 33, p. 4.

<sup>36</sup> Baker, M., New York City Board of Education Task Force on Sex Equity, *Vocational/Technical Education: Opportunities for Young Women*, May 2000.

Equal Protection Clause of the Constitution, and state and city protections against discrimination.<sup>37</sup>

The Task Force on Sex Equity, which brought together members of industry and advocacy groups, represented a concerted effort to eliminate barriers to female participation in the city's CTE schools and programs. Although the Task Force began to shift away from its goal of addressing the root causes of sex inequity in favor of curricular and programmatic changes, it was partly responsible for creating an improved CTE system.<sup>38</sup> Nonetheless, it was eliminated as part of the 2003 centralization of the city's school system.

### ***Models for Increasing Female Participation in CTE***

Collaborative efforts involving government, advocacy organizations, and the private sector can be effective in encouraging female enrollment in CTE programs that are nontraditional for their gender. For example, the first incoming class of the one-year-old High School for Construction Trades, Engineering, and Architecture was 30 percent female.<sup>39</sup> This percentage—higher than in six other male-dominated CTE schools—is due in large part to the efforts of Legal Momentum, a women's advocacy organization. Legal Momentum's outreach included a female-targeted promotional flyer, recruitment events featuring women successfully employed in the construction trades, and training for guidance counselors on how to encourage nontraditional career choices for girls. The school hopes to continue efforts to achieve gender-balanced enrollment<sup>40</sup> and has also partnered with Nontraditional Employment for Women (NEW), a construction skills pre-apprentice program for women.<sup>41</sup>

School districts across the country are also implementing promising strategies. In North Dakota, Minot Public Schools (MPS) CTE programs have begun to offer regular opportunities for nontraditional career exploration such as career and skill awareness days and technology camps. MPS has targeted girls in seventh and eighth grade, providing informational workshops by women in nontraditional jobs, programs highlighting the importance of math and science skills, hands-on activities and fieldtrips, and stipends for the completion of a camp program. As of 2005, nontraditional enrollment in MPS CTE programs had increased by 32 percent.<sup>42</sup> Minneapolis Public Schools are working to increase female enrollment in high-tech courses with a High Tech Girls' Society (HTGS) program. By combining a series of hands-on activities and rigorous curriculum with mentoring by women in high-tech fields, HTGS succeeded in

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<sup>37</sup> See 33, p. 1

<sup>38</sup> Interview with Martha Baker. Office of the Public Advocate of the City of New York. June 29, 2006.

<sup>39</sup> High School for Construction Trades, Engineering, and Architecture was not included in the Office of the Public Advocate's analysis of enrollment because it has no programs that have been certified by the state and is not included in the DOE's on-line list of CTE-designated schools.

<sup>40</sup> Interview with Legal Momentum. Office of the Public Advocate of the City of New York. June 20, 2006

<sup>41</sup> DOE, <http://schools.nyc.gov/Offices/StudentEnroll/HSAdmissions/HSDirectory/Book/?sid=1247>

<sup>42</sup> The Association of Career and Technical Education, National Alliance for Partnerships in Equity, National Association of State Directors of Career Technical Education Consortium, and National Women's Law Center, Programs and Practices That Work: Preparing Students for Nontraditional Careers Project, *Forging New Pathways: Promising Practices for Recruiting and Retaining Students in Career and Technical Education Programs That Are Nontraditional for Their Gender*, June 2005.



increasing the number of girls enrolled in high-tech courses by 5 percent as of 2006, with greater increases in engineering, IT, construction, and auto technology classes.<sup>43</sup>

Seattle Public Schools have connected more than 10,000 high school girls with women in technology careers since 2000 through a program called Inspiring Girls in Technology Evolution (IGNITE). IGNITE has helped spur substantial gains in female enrollment in technology courses and schools. For example, since 2000, female enrollment in Cisco Networking Academies has grown from less than 17 percent to 35 percent; in some schools, female enrollment is now as high as 80 percent. Female enrollment in general IT courses in Seattle public schools has grown from less than 10 percent to 20 percent, and in some cases, almost 50 percent. IGNITE has also had great success in engaging Seattle's business community. In 2004, 66 percent of Microsoft high school internships were awarded to girls.<sup>44</sup> (See Appendix C for examples of best practices.)

## METHODOLOGY

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In November 2007, the Office of the Public Advocate collected information on the enrollment and gender ratios in the 18 CTE-designated high schools listed on the DOE's CTE website.<sup>45</sup> The website indicates that the programs in these schools "are implemented in compliance with State Education Department guidelines and criteria for approval of sequenced career programs."<sup>46</sup> The State Education Department's website confirms that all 18 of the schools have at least one state-certified program.<sup>47</sup> School enrollment and gender ratio figures as of October 29, 2007 were obtained from the Statistics section of the DOE School Portal.<sup>48</sup> The program listings for each school as of October 2007 were obtained from the DOE High School Directory.<sup>49</sup>

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<sup>43</sup> The Association of Career and Technical Education, National Alliance for Partnerships in Equity, National Association of State Directors of Career Technical Education Consortium, and National Women's Law Center, Programs and Practices That Work: Preparing Students for Nontraditional Careers Project, *Constructing Equity: Promising Practices for Recruiting and Retaining Students in Career and Technical Education Programs That Are Nontraditional for Their Gender*, June 2006.

<sup>44</sup> The Association of Career and Technical Education, National Alliance for Partnerships in Equity, National Association of State Directors of Career Technical Education Consortium, and National Women's Law Center, Programs and Practices That Work: Preparing Students for Nontraditional Careers Project, *Reaching New Heights: Promising Practices for Recruiting and Retaining Students in Career and Technical Education Programs That Are Nontraditional for Their Gender*, July 2007.

<sup>45</sup> DOE, [www.nyccte.com/nycctenew/cteschoollist.asp](http://www.nyccte.com/nycctenew/cteschoollist.asp).

<sup>46</sup> DOE, [www.nyccte.com/nycctenew/ctedefinition.asp](http://www.nyccte.com/nycctenew/ctedefinition.asp).

<sup>47</sup> DOE, <http://emsc32.nysed.gov/cte/ctepolicy/Approved.htm>.

<sup>48</sup> DOE, <http://schools.nyc.gov/default>.

<sup>49</sup> DOE, <http://schools.nyc.gov/Offices/StudentEnroll/HSAAdmissions/HSDirectory/default.htm>.

## FINDINGS

### *Girls Severely Underrepresented*

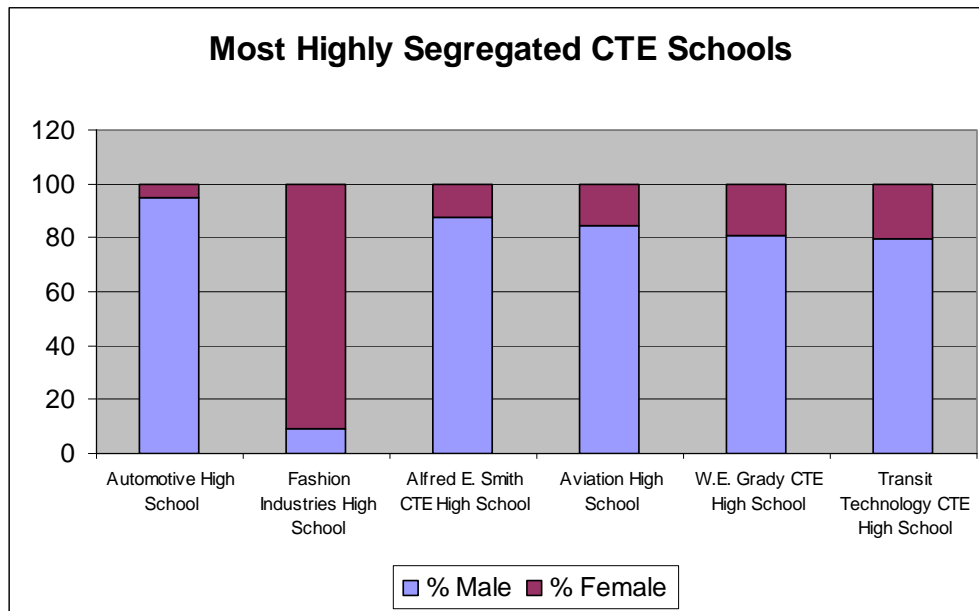
The overall enrollment in New York City high schools is approximately 49 percent male and 51 percent female.<sup>50</sup> Average enrollment in the 18 high schools on the DOE's list of CTE-designated schools, however, is nearly 59 percent male and 41 percent female.<sup>51</sup>

The gender imbalance within individual schools is greater.

- 6 of the 18 schools are more than 75 percent male
- 11 of the 18 schools are more than 55 percent male
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- 1 school is more than 75 percent female

Of the six schools with the greatest gender imbalance, five favor male enrollment. These five schools offer programs in the aviation, automotive maintenance, and construction trades,<sup>52</sup> predicted growth industries for New York City with high-wage potential and secure career tracks.<sup>53</sup> The sixth school, Fashion Industries High School, offers programs in design, visual art,

and marketing, fields in which jobs typically require a secondary degree.<sup>54</sup>



<sup>50</sup> DOE, *The Class of 2006 Four-Year Longitudinal Report and 2005-2006 Event Dropout Rates*, May 2007.

<sup>51</sup> See 48.

<sup>52</sup> Male enrollment: Alfred E. Smith High School, 88%; Automotive CTE High School, 95%; Aviation CTE High School, 85%; W.E. Grady CTE High School, 81%; Transit Technology CTE High School, 80%.

<sup>53</sup> See 9.

<sup>54</sup> Female enrollment: 91%.

Some schools have made significant progress in closing the gender gap. Four schools have decreased the gender gap by 10 percentage points or more between June, 2003, and the 2007 school year.<sup>55</sup> However, several other schools have experienced an increase in gender disparity, and the disparity in the system as a whole remains marked.

### ***Unequal Access to AP Courses***

Girls in CTE high schools have fewer opportunities than males to take advanced placement (AP) courses, which allow students to earn college credit and obtain valuable skills.

- 79 percent of male CTE students are in schools that offer at least one math and science AP course, while only 59 percent of female CTE students are in schools that offer at least one math and science AP course.
- 11 of 13 CTE schools with more males than females offer AP courses in math and science.
- 3 of 5 CTE schools with more females than males *do not* offer AP courses in math and science.

Just as some schools have made progress in addressing their gender imbalance, many CTE high schools have added to their AP course offerings since June, 2003.<sup>56</sup> Others, however, now offer fewer AP courses.

## **RECOMMENDATIONS**

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The DOE should take the following steps to achieve gender balance in its CTE-designated schools:

### ***Increase recruitment and retention of females in programs that are nontraditional for their gender***

The DOE should provide all middle school girls and their parents with complete and accurate information on CTE programs, with an emphasis on dispelling misconceptions about CTE students and gender stereotypes associated with particular careers. Brochures and other informational material on CTE should highlight opportunities for women in fields that are nontraditional for their gender and list resources for students seeking further information and support services.

The DOE should also provide primary and secondary school guidance counselors with periodic training on recruiting and retaining girls in programs of study that are nontraditional for their gender. The DOE should incorporate strategies that have succeeded in school districts across the country into its own efforts to increase female participation in CTE.

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<sup>55</sup> Female enrollment: Art & Design High School, 32.5% in 2003, 47% in 2007; Chelsea CTE High School, 30% in 2003, 41% in 2007; Grace Dodge CTE High School, 73% in 2003, 63% in 2007; Graphic Communication High Arts High School, 35% in 2003, 49.5% in 2007

<sup>56</sup> The National Women's Law Center. "NYC Schools—Progress in Enrollment & AP Course Offerings 1999/2003," September, 2003.

***Provide more math and science AP classes in predominantly female schools***

The DOE can immediately help girls succeed in their occupational and academic pursuits by ensuring that females in CTE schools have equal access to AP courses in math and science. Initial AP course offerings should be in subject areas linked to the school's programs of study.

***Provide disaggregated admissions data***

Currently, the DOE provides a gender breakdown for enrollment at each school. To ensure accountability and measure progress in correcting the gender imbalance at CTE schools, the DOE should expand the available high school admissions data to provide the following for every CTE school:

- The applicant pool by gender
- Enrollment by program and gender at the start of the academic year
- Enrollment by program and gender at the end of the academic year

In addition, the DOE should track enrollment and retention data by a number of other categories, including race, ethnicity, English language proficiency, disability, pregnancy and parenting, and socioeconomic status.

***Meet and Exceed Title IX Requirements***

Federal regulations require school districts to adhere to basic provisions, such as publishing nondiscrimination statements and contact information for compliance coordinators and avoiding discriminatory counseling practices that lead to disproportionate program enrollment. The DOE should ensure that its CTE-designated high schools not only meet these requirements but go beyond them and cultivate an institutional commitment to gender equity by taking the following steps:

- Ensure that all CTE schools have a designated sex equity coordinator
- Conduct regular compliance reviews independent of the biennial reviews conducted by the State Education Department
- Make schools' written compliance plans available on the DOE website
- Make a list of all Local Equal Opportunity Coordinators (LEOC) by school available on the DOE website

**APPENDIX A:**

**Table of CTE School Enrollment**

<b>Name</b>	<b>Borough</b>	<b>Total Enrollment</b>	<b>Male</b>	<b>Female</b>	<b>% Male</b>	<b>% Female</b>
Automotive High School	Brooklyn	1,139	1,080	59	94.82	5.18
Fashion Industries High School	Manhattan	1665	150	1,515	9.01	90.99
Alfred E. Smith CTE High School	Bronx	1207	1058	149	87.66	12.34
Aviation High School	Queens	2020	1712	308	84.75	15.25
W.E. Grady CTE High School	Brooklyn	1475	1189	286	80.61	19.39
Transit Technology CTE High School	Brooklyn	1691	1351	340	79.89	20.11
Samuel Gompers CTE High School	Bronx	1529	1163	366	76.06	23.94
Clara Barton High School	Brooklyn	2313	592	1721	25.59	74.41
Jane Addams High School for Academic Careers	Bronx	1766	566	1200	32.05	67.95
Thomas A. Edison CTE High School	Queens	2742	1850	892	67.47	32.53
William Maxwell CTE High School	Brooklyn	1168	386	782	33.05	66.95
Ralph McKee CTE High School	Staten Island	775	517	258	66.71	33.29
Grace Dodge CTE High School	Bronx	1480	549	931	37.09	62.91
George Westinghouse CTE High School	Brooklyn	905	560	345	61.88	38.12
Queens Vocational and Technical High School	Queens	1207	733	474	60.73	39.27
Chelsea CTE High School	Manhattan	982	581	401	59.16	40.84
Art & Design High School	Manhattan	1394	738	656	52.94	47.06
Graphic Communication Arts High School	Manhattan	1901	961	940	50.55	49.45

Enrollment as of 10/29/07, NYC DOE, <http://schools.nyc.gov/default.aspx>

**APPENDIX B**  
**Table of CTE School Programs**

School	AP Courses	AP in Math & Science	Honors	Nursing	Health Care	Construction Trades	Auto Maintenance	Science/Tech/Comp	Aviation	Pre-Engineering	Law/Paralegal	Cosmetology	Fashion	Culinary Arts	Travel/Tourism	Visual Art/Design	Business/Visual Ent.	Communication
Automotive High School	5	M,B	-				x										x	
Fashion Industries High School	3	-	x										x			x	x	
Alfred E. Smith CTE High School	4	M	x			x	x			x								
Aviation High School	3	P	-					x	x	x								
W.E. Grady CTE High School	2	-	x				x	x		x				x				
Transit Technology CTE High School	5	M,T	x					x		x								
Samuel Gompers CTE High School	5	B	x					x		x						x		
Clara Barton High School	6	B,M	x		x													
Jane Addams High School for Academic Careers	6	-	-		x						x	x			x		x	
Thomas A. Edison CTE High School	6	B,M	-		x			x		x						x		
William Maxwell CTE High School	2	-	-		x							x	x			x		x
Ralph McKee CTE High School	4	B	-			x	x	x		x		x						
Grace Dodge CTE High School	5	B	-	x				x			x	x					x	
George Westinghouse CTE High School	4	C	-		x			x										
Queens Vocational and Technical High School	2	C,M	-			x		x		x		x					x	
Chelsea CTE High School	2	M	-					x								x		
Art & Design High School	10	B,M	x													x		
Graphic Communication Arts High School	2	-	-								x					x		x

As of 10/31/2006, NYC DOE, <http://schools.nyc.gov/Offices/StudentEnroll/HSAAdmissions/HSDirectory/default.htm>  
AP Codes: (M) calculus/statistics, (B) biology, (C) chemistry, (P) physics, (T) computer science

**APPENDIX C:**

**Best Practices for Nontraditional Participation and Completion in CTE**

Strategy	Goal	Result
<b>Minot Public Schools*</b>		
<b>Role models and mentors:</b> Diva Tech (Grades 8-12)	Day-long event featuring hands-on exploration of trades nontraditional for females offered in CTE programs such as auto tech, welding, and IT. Includes Q&A sessions with female role models and school guidance counselors.	32% increase in nontraditional course enrollment over 3 years.
<b>Middle school programs:</b> Define Your Dreams (Grades 7 and 8)	Similar to Diva Tech. Emphasizes the importance of math, science, and problem-solving skills for daily life and careers.	
<b>Pre-technical training program:</b> Technology camp (Grades 8-11)	3-day trip. Female professionals guide students through local businesses, coal mines, and electrical and manufacturing plants. Students work on designing a publication and are given a stipend for participating.	
<b>Michigan Department of Labor and Economic Growth, Office of Career and Technical Preparation*</b>		
<b>Support and career counseling:</b> The Michigan Breaking Traditions Award	Awards students in CTE programs that are nontraditional for their gender. Selection based on letters from educators, student essays, achievement, career goals, and mentoring of peers with similar interests. Awards ceremony is attended by media and state legislators. The Department distributes a brochure featuring each year's award winners.	Caliber of nominations and student achievement improving year to year, according to Department of Labor and Economic Growth.
<b>Northeast Community College (Norfolk, Nebraska)*</b>		
<b>Targeted recruitment:</b> Career Camp (Grades 10-12)	3-day camp for young women. Students explore nontraditional occupations and related courses offered at the College. Workshops on electronics, construction, accounting, mechanical tech, drafting, computer programming, welding, auto tech, and natural resource management. Female professionals in these areas discuss overcoming obstacles in the workplace.	Participant evaluations credit camp with participants' decision to pursue careers in welding and the automotive industry.
<b>Illinois Center for Specialized Professional Support**</b>		
<b>Community and business partners:</b> The NTO Look	Encourages secondary educational institutions to partner with post-secondary institutions or businesses to implement and strengthen their nontraditional programs. Partnerships are encouraged to implement research-based plans and are provided with technical support and resources including funds from Perkins III. Partnerships required to conduct self-assessment of plans.	Nearly 80% of Illinois community colleges participate in NTO Look or similar projects. The state's postsecondary system credits program with helping it achieve performance level for Perkins III Fourth Core Indicator for nontraditional participation and completion.
<b>Minneapolis Public Schools**</b>		
<b>Mentoring and support network:</b> High Tech Girls' Society	Combines a series of hands-on activities and rigorous curriculum with mentoring by women in high-tech fields such as aviation, engineering, and information technology. Program's focus is to provide girls with a network of support that will lead them through program completion.	Increased the number of girls enrolled in high-tech courses by 5%. Program effects were greater in engineering, IT, construction, and auto technology classes.
<b>Seattle Public Schools†</b>		

<p><b>Program:</b> Inspiring Girls in Technology Evolution (IGNITE)</p>	<p>Helps encourage female enrollment in technology courses and schools by connecting more than 10,000 high school girls with women in technology careers.</p>	<p>Female enrollment in Cisco Networking Academies has grown from less than 17% percent to 35-to-80%. Female enrollment in general IT courses has grown from less than 10% to 20%, and in some cases, almost 50%. In 2004, 66% of Microsoft high school internships were awarded to girls.</p>
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\* See 42 \*\* See 43 † See 44