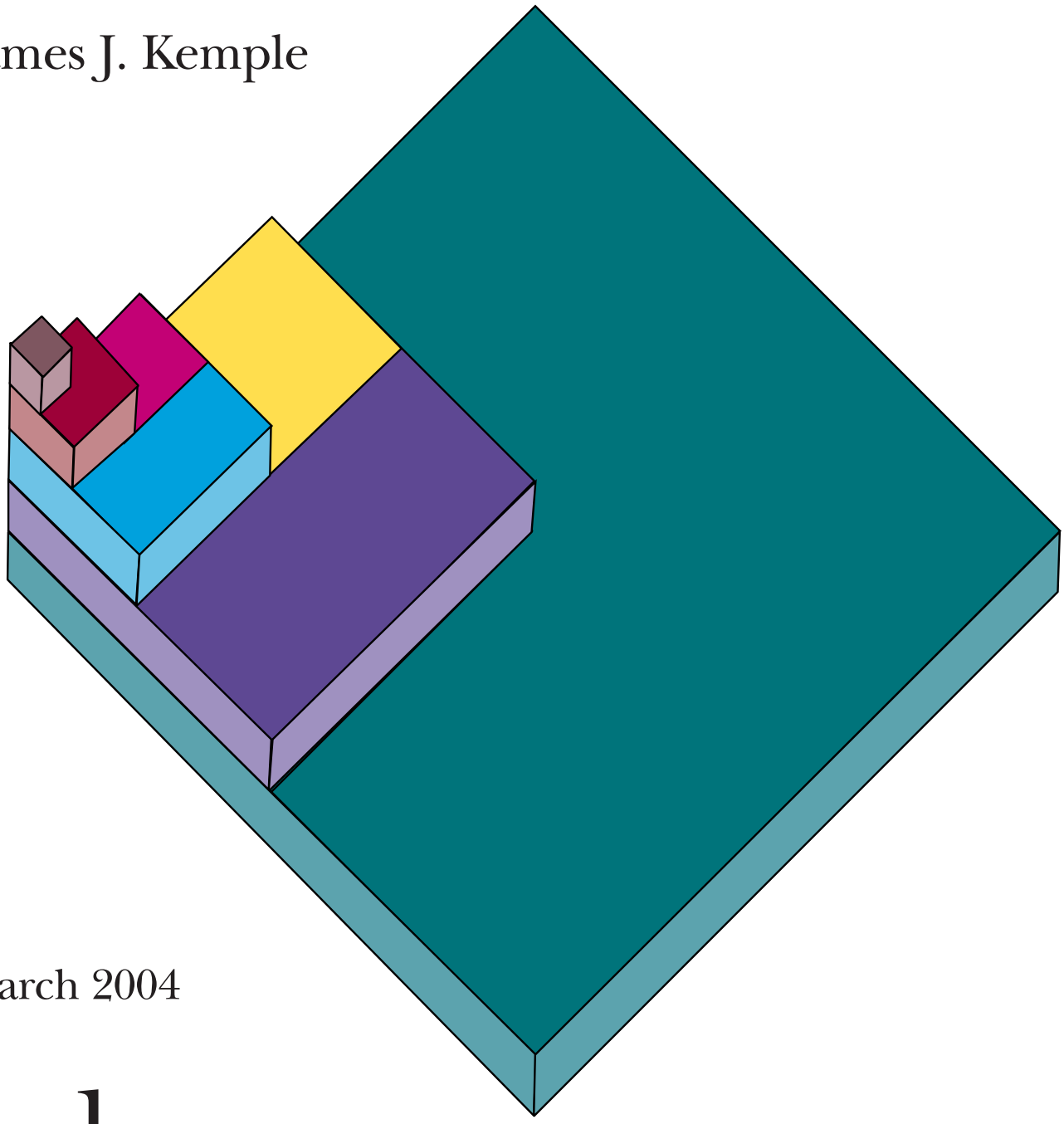
Career Academies

Impacts on Labor Market Outcomes and Educational Attainment

James J. Kemple



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with

Judith Scott-Clayton

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Overview

Established more than 30 years ago, Career Academies have become a widely used high school reform initiative that aims to keep students engaged in school and prepare them for successful transitions to post-secondary education and employment. Typically serving between 150 and 200 high school students from grade 9 or 10 through grade 12, Career Academies are organized as small learning communities, combine academic and technical curricula around a career theme, and establish partnerships with local employers to provide work-based learning opportunities. There are estimated to be more than 2,500 Career Academies across the country.

Since 1993, MDRC has been conducting a uniquely rigorous evaluation of the Career Academy approach that uses a random assignment research design in a diverse group of nine high schools across the United States. Located in medium- and large-sized school districts, the schools confront many of the educational challenges found in low-income urban settings. The participating Career Academies were able to implement and sustain the core features of the approach, and they served a cross-section of the student populations in their host schools. This report describes how Career Academies influenced students' capacity to improve their labor market prospects and sustain their engagement in post-secondary education programs in the four years following their expected graduation. The results are based on the experiences of more than 1,400 young people, approximately 85 percent of whom are Hispanic or African-American.

Key Findings

- The Career Academies substantially improved the labor market prospects of young men, a group that has experienced a severe decline in real earnings in recent years. Through a combination of increased wages, hours worked, and employment stability, the young men in the Academy group earned over $10,000 (18 percent) more than those in the non-Academy control group over the four-year follow-up period.
- The Career Academies had no significant impacts (positive or negative) on the labor market outcomes for young women. This may be due, in part, to the fact that young women in both the Academy and the non-Academy group had greater propensity than the young men to be attending school or taking care of children.
- Overall, the Career Academies served as viable pathways to a range of post-secondary education opportunities, but they do not appear to have been more effective than options available to the non-Academy group. More than 90 percent of the students in the Academy and non-Academy groups graduated from high school or received a General Educational Development (GED) certificate. By the end of the follow-up period, more than half the sample had completed a post-secondary credential or were working toward one.
- The positive labor market impacts were concentrated among Academy group members who were at high or medium risk of dropping out of high school when they entered the programs. Although the Career Academies reduced enrollments in post-secondary education among those who entered the programs at highest risk of dropping out, this does not appear to have diminished the substantial earnings advantage produced by the Academies for this subgroup. The lack of labor market impacts for the low-risk subgroup may be due to this group's greater focus, relative to the others, on post-secondary education.

The findings demonstrate the feasibility of improving labor market preparation and successful school-to-work transitions without compromising academic goals and preparation for college. They provide compelling evidence that investments in career-related experiences during high school can produce substantial and sustained improvements in the labor market prospects of youth during their post-secondary years. In fact, Career Academies are one of the few youth-focused interventions that have been found to improve the labor market prospects of young men.

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Amplifying on issues and findings in the report, supplemental materials from the Evaluation are available only on the Web at http://www.mdrc.org/publications/366/techresources.pdf

List of Exhibits

Preface

This report is being released amid growing concern about the diminishing value of a standard high school diploma and the inability of high schools, particularly those in large cities serving low-income communities, to equip their graduates with the credentials and job-readiness skills they need to make successful transitions to college and the workforce. The nation is also confronting a widening gap between the earnings of young workers — particularly young men — who have only a high school diploma and those who have some post-secondary education. In response to these trends, education policymakers and practitioners are pursuing a range of far-reaching strategies for improving American high schools, particularly those serving students placed at risk of leaving school without the skills necessary to pursue further education and make successful transitions to the world of work.

Career Academies stand at the crossroads of many high school reform strategies, which include principles embedded in the Career Academy approach. Like Career Academies, some reform initiatives aim to create small learning communities and decentralized governance. Other reform efforts focus on changes in curricula and learning goals that students are required to attain. Still others seek to reconstitute the relationship between high schools and their communities, including local employers and social institutions. In addition, with public support and under the guidance of national and local intermediary organizations, Career Academies continue to proliferate at a rapid pace: Today, they number approximately 2,500 throughout the United States.

Intersecting these concerns about how best to prepare young people for college and the workforce is a growing demand for more reliable evidence about what works to improve schools and about the long-term effectiveness of interventions like Career Academies, in particular. The Career Academies Evaluation is pathbreaking in both its rigor and its scope. It has been built on the foundation of a random assignment design, now widely considered to be the gold standard in measuring the effectiveness of social program interventions. The U.S. Department of Education has recently embraced such designs and evaluation strategies in its attempt to raise the standards of evidence for determining what works to improve schools. The four-year post-high school follow-up period covered in this report presents a unique opportunity to examine how Career Academies influence students' capacity to sustain their engagement in post-secondary education programs and improve their labor market prospects.

The findings in this report provide new and compelling evidence that investments in career-related experiences during high school can produce substantial and sustained improvements in the labor market prospects of youth during their post-secondary years. Moreover, the evidence establishes Career Academies as one of the few youth-focused interventions that have been found to improve the labor market prospects of young men. At a time when career-related

high school programs are being criticized for creating barriers to college, these findings show that Career Academies can prepare young people for healthy transitions to employment without compromising academic goals and preparation for college.

Evidence from this report can inform education policymakers, administrators, and teachers as they consider strategies for improving urban high schools and ponder the future of career and technical education. These findings should also be highly relevant to forthcoming deliberations in the U.S. Congress on the reauthorization of the Carl D. Perkins Applied Technology and Vocational Education Act and to discussions in the U.S. Department of Education on federal initiatives that target the nation's troubled high schools.

With support from the U.S. Departments of Education and Labor, MDRC plans to continue collecting information on the young people's education and labor market experiences through eight years following their scheduled high school graduation. The goal of this ongoing work is to determine whether the Career Academies enable students to make better choices about post-secondary education and employment and whether their choices lead to higher educational attainment and entry into higher-wage, more career-oriented jobs. We are confident that, in keeping with MDRC's mission, the Career Academies Evaluation will continue to offer policymakers and educators useful lessons about what works for high school students and will demonstrate the value of subjecting promising school reform approaches to rigorous tests of effectiveness.

Robert J. Ivry
Senior Vice President

Acknowledgments

This report reflects more than 10 years of research on Career Academies and is the product of a remarkable collaboration between staff at MDRC and the sites, funders, and advisors who have supported the evaluation. This undertaking would not have been possible without the vision and support of the funding organizations listed at the front of the report. Special gratitude is also due the staff at the participating Career Academies, high schools, school districts, and employer partners, as well as the young people who generously gave of their time to respond to the surveys that MDRC and its partners have administered over the years. The survey for this report was administered by Anne Van Aman and her associates, who worked relentlessly to find and interview the young people in the study sample.

The report benefited greatly from the input of key advisors to the evaluation. Thomas Bailey of Columbia University's Teachers College, Harry Holzer of Georgetown University, Richard Murnane of the Harvard Graduate School of Education, David Stern of the University of California at Berkeley, and Andrew Sum of Northeastern University reviewed an early draft of the findings. They provided invaluable advice regarding further analyses and offered insights into the results and their implications. Edward Pauly, from The Wallace Foundation, and Alison Bernstein, Janice Petrovich, and Cyrus Driver, from the Ford Foundation, have provided helpful guidance and counsel throughout the study.

Formal preparation of this report was preceded by briefings and discussions with the project's funders and several policy and practitioner groups. These exchanges yielded numerous suggestions for additional analyses, provided sources of contextual material, and pointed to implications that the findings may have for policy and practice. We are particularly grateful to the following people and organizations who helped organize and guide the briefing activities: Grover Whitehurst, Marsha Silverberg, Gregory Henschel, and their colleagues at the U.S. Department of Education's Institute of Education Sciences; Susan Sclafani, Hans Meeder, and their colleagues at the U.S. Department of Education's Office of Vocational and Adult Education; Emily DeRocco, Mason Bishop, Maria Kniesler-Flynn, Roxie Nicholson, and their colleagues at the U.S. Department of Labor's Employment and Training Administration; Beth Buehlmann at the U.S. Chamber of Commerce's Center for Workforce Preparation; Betsy Brand and her colleagues at the American Youth Policy Forum; Linda Harris and Jodie Levin-Epstein at the Center for Law and Social Policy; Jon Baron at the Council for Excellence in Government; and Charles Dayton and staff from the partnering organizations that participate in the periodic Career Academies conversations.

Leaders from several organizations concerned with Career Academies also provided perceptive comments on the findings: Charles Dayton, David Stern, and Susan Tidyman of the

Career Academy Support Network, John Ferrandino and Gregg Betheil of the National Academy Foundation, and Sandy Mittlesteadt of the National Career Academy Coalition.

Throughout the Career Academies Evaluation, Robert Ivry, MDRC's Senior Vice President for Development and External Affairs, played a pivotal role in building partnerships with the sites, funders, and advisors that form the foundation for the study. This report benefited greatly from his insights and advice on how to sharpen the presentation of the findings and their policy implications. Other MDRC staff members played key roles in acquiring and analyzing data for this report. Marla Sherman coordinated the survey administration and data collection process with Anne Van Aman, and Joel Gordon and Galina Farberova prepared the initial survey data files for analysis.

Jason Snipes provided valuable guidance on a range of analytic issues and offered many useful insights into the patterns and interpretation of the findings. Nickisha Stephenson assisted in a wide range of research tasks, helped prepare the tables and figures, and coordinated the production of this report. Gordon Berlin, Howard Bloom, Fred Doolittle, Judith Gueron, Robert Ivry, Kent McGuire, Marilyn Price, and Jason Snipes reviewed drafts and provided helpful technical and substantive guidance on the presentation of the findings. We thank Louis Richman for help guiding the report's organization and Robert Weber for his skillful editing. Finally, we are grateful to Stephanie Cowell, who prepared the final manuscript for publication.

The Authors

Executive Summary

Today, high schools face more pressure than ever to produce graduates who can enter and succeed in post-secondary education. At the same time, high schools have been pressed to rethink the way they prepare young people for transitions to the world of work, whether or not this path leads through post-secondary education. Specifically, new school-to-work transition strategies have emphasized partnerships with local employers, use of a broad array of career development strategies beyond training in specific skills, integration of academic and career-related coursework, and work-based teaching and learning.

Meanwhile, transitions from school to work have become increasingly complex and, for many young people, problematic. More and more young people are combining post-secondary education and work, or are moving between school and work to accommodate shifting individual preferences, economic conditions, and available opportunities. Today's labor market provides fewer entry-level, career-oriented jobs for young workers, typically those between ages 18 and 26. Employment prospects have become particularly bleak for youth with less than two years of post-secondary education, as their earnings have declined precipitously in recent years relative to the earnings of those who have college degrees. Hardest hit have been young men of color and from low-income communities. These trends in the youth labor market and the economy as a whole have placed increasing pressure on high schools to provide higher-quality opportunities that prepare their students for work as well as for higher education.

Career Academies offer high schools — particularly those in urban communities that struggle to keep students in school and to prepare them for post-secondary education and employment opportunities — a systematic approach to addressing a range of challenges. Typically serving between 150 and 200 students from grades 9 or 10 through grade 12, Career Academies have three distinguishing features: (1) they are organized as small learning communities to create a more supportive, personalized learning environment; (2) they combine academic and career and technical curricula around a career theme to enrich teaching and learning; and (3) they establish partnerships with local employers to provide career awareness and work-based learning opportunities for students. There are estimated to be more than 2,500 Career Academies across the country, operating either as a single program or as multiple programs within a larger high school.

Although there is a rich body of research into Career Academies and other school reforms that aim to accomplish multiple and complex goals, there is little rigorous evidence from which to judge the initiatives' *long-term* effectiveness. Do investments in career-related interventions in high school really pay off in the labor market? Does preparation for healthy transitions from school to work come at the expense of college readiness? To what extent can career-

related high school initiatives pave the way for youth — particularly young men with limited post-secondary education — to enter jobs that offer high earnings and viable career paths?

Since 1993, MDRC has been conducting a uniquely rigorous evaluation of the Career Academy approach in a diverse group of nine high schools across the country. The high schools are located in medium- and large-sized school districts and reflect many of the stressful conditions found in urban settings. The participating Career Academies were able to implement and sustain the core features of the approach, and they served a cross-section of the student populations in their host high schools. The evaluation is being funded by the U.S. Departments of Education and Labor and by 17 private foundations and organizations.

The Career Academies Evaluation is one of the few studies of a school reform initiative that uses the design of a randomized, controlled field trial. Because more students applied for the Academy programs than could be served, applicants were randomly selected to enroll (the Academy group). The remaining students constitute the study's non-Academy control group. Subsequent differences in outcomes between the two groups provide valid estimates of the Academies' impacts. This type of research design is widely considered to be the most reliable way to measure the effectiveness of interventions such as Career Academies. The evaluation is also unusual among studies of school reforms for following both groups of students from the beginning of high school through four years after scheduled graduation.

MDRC's earlier reports from the evaluation indicate that Career Academies appear to have been most effective at influencing those aspects of school functioning and student and teacher experiences that are closest to the core features of the approach. Students in the Academy group reported higher levels of interpersonal support from their teachers and peers than did students in the non-Academy group. For students who entered the programs at high risk of dropping out, the Academies increased the likelihood of their staying in school through the end of 12th grade, improved attendance, and increased the number of credits earned toward graduation. The Career Academy–employer partnerships, in particular, provided students with a much broader array of career-awareness and development experiences both in and outside school, including work-based learning internships. At the same time, the Academies evaluation appears to have had less influence on curriculum content and teachers' instructional practice. Previously reported findings even suggest that some Academy students may have substituted more career-related courses for their academic core courses and thereby mitigated the employment-related benefits of the programs.

This report examines the impact that Career Academies have had on the educational attainment and post-secondary labor market experiences of young people through the four years following their scheduled graduation from high school. It is based on survey data collected from 1,458 young people in the Career Academies Evaluation study sample (about 85 percent of whom are either Hispanic or African-American).

Impacts on Labor Market Outcomes

- **The Career Academies produced positive and sustained impacts on a range of labor market outcomes among the young men in the study sample.**

The Career Academies increased earnings for young men by an average of $212 per month over 48 months (see Exhibit ES.1). This amounts to an 18 percent increase over the non-Academy group's average earnings of $1,161 per month, and it totaled more than $10,000 in additional earnings for the Academy group over the 48-month follow-up period. The Career Academies' impact on earnings for young men is substantially larger than the roughly $100 difference in monthly earnings that has been found in other research that compared the earnings of young workers who have one or two years of post-secondary education with the earnings of their counterparts who have only a high school diploma or a General Educational Development (GED) certificate. These findings are noteworthy in light of the declining labor market prospects for young men in recent years, particularly among young men with limited post-secondary education.

The Career Academy impacts on total earnings resulted from the combined impacts that the programs had on the number of months employed, hours worked per week, and hourly wages. In other words, Career Academies were likely to have helped the young men obtain better-paying jobs and jobs that afforded them the opportunity to work more hours (more often in full-time rather than part-time jobs).

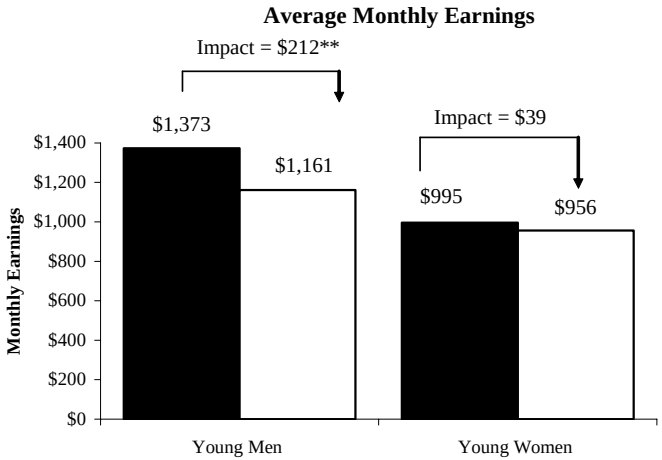
- **Overall, the Career Academies had no impacts (positive or negative) on labor market outcomes for young women.**

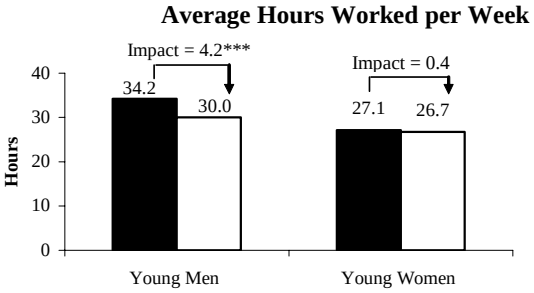
Average monthly earnings, number of months employed, hours worked per week, and hourly wages were very similar overall for young women in the Academy and non-Academy groups (see Exhibit ES.1). One reason for the lack of post-high school labor market impacts among young women may be that the young women in the sample were more focused, relative to the young men, on attending post-secondary education programs or taking care of their children. Further analysis did reveal, however, that young women with children may have experienced some boost in their labor market prospects from the Career Academies. Among young women who had children, those in the Academy group were employed for more months during the follow-up period, and they earned about $107 more per month than those in the non-Academy group. (It should be noted that these differences are not statistically significant and may not reflect the impact of Career Academies.)

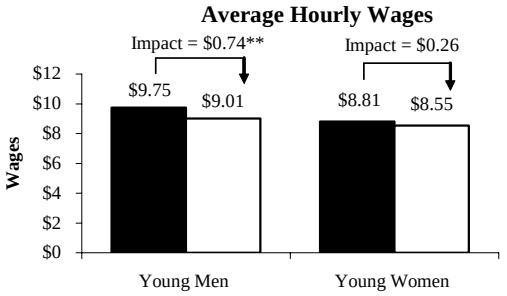
Career Academies Evaluation

Exhibit ES.1

Impacts on Average Monthly Earnings and Components of Earnings, by Gender







SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey.

NOTES: Measures reflect averages over the 48-month period following scheduled high school graduation for each sample member. A two-tailed t-test was applied to differences between the Academy and non-Academy groups (impacts). Statistical significance levels are indicated as *** = 1 percent; ** = 5 percent; and * = 10 percent.

Monthly earnings were calculated by multiplying each sample member's reported hourly wage times the hours worked per week times the number of weeks worked per month. For months in which sample members did not report being employed, zero values were used for monthly earnings and the components of earnings.

Hourly wages and weekly hours worked reported by sample members at the conclusion of each job were applied to the full duration of the job. Thus, if wages or hours increased or decreased during the job, these measures may over- or underestimate true monthly earnings. Additional analyses indicate that the pattern of impacts was not sensitive to various assumptions about changes in wages or hours.

- **The Career Academies produced substantial increases in employment and earnings for students who entered the programs at high or medium risk of dropping out of high school.**

Among students who entered high school at the highest risk of dropping out, the Academies increased earnings by an average of $168 per month, or 16 percent, compared with the non-Academy group's average monthly earnings of $1,036. The impact for the medium-risk subgroup was an average increase of $141 per month, or 14 percent more than the non-Academy group's average monthly earnings. The Career Academies also produced positive impacts in terms of the number of months employed, hours worked per week, and hourly wages, although some of the impacts for the smaller high-risk subgroup are not statistically significant.

The lack of impacts on labor market outcomes for the low-risk subgroup may be due, in part, to the fact that this group made a substantial investment in post-secondary education during the follow-up period. For example, those in the low-risk subgroups (from both the Academy and the non-Academy group) spent just over 30 months enrolled in post-secondary education programs, and over 40 percent were still working on a post-secondary education credential at the end of the follow-up period.

Impacts on Educational Attainment

- **Overall, the Career Academies had no impacts (positive or negative) on educational attainment, although high school completion rates and post-secondary enrollment and attainment rates were higher than national averages.**

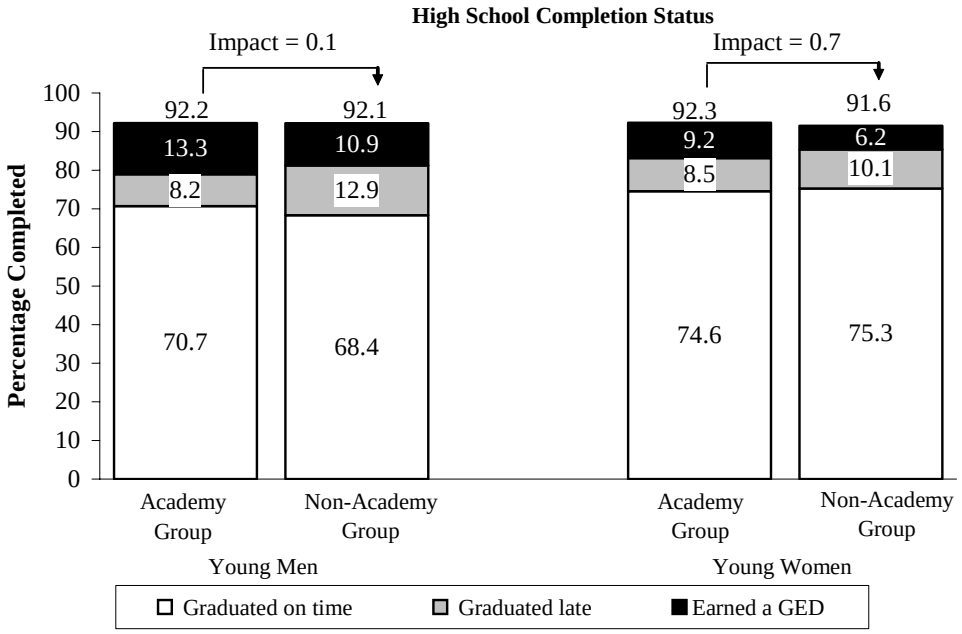
Over 90 percent of the young people in the Academy and non-Academy groups graduated from high school or received a GED, and nearly 80 percent enrolled in some type of post-secondary education program. By the end of the four-year post-high school follow-up period, over half of those in both the Academy and the non-Academy group had either completed a post-secondary credential (a bachelor's degree, an associate's degree, or a training license or certificate) or were still working toward a credential. These educational attainment levels are higher than national averages for similar students from similar school districts.

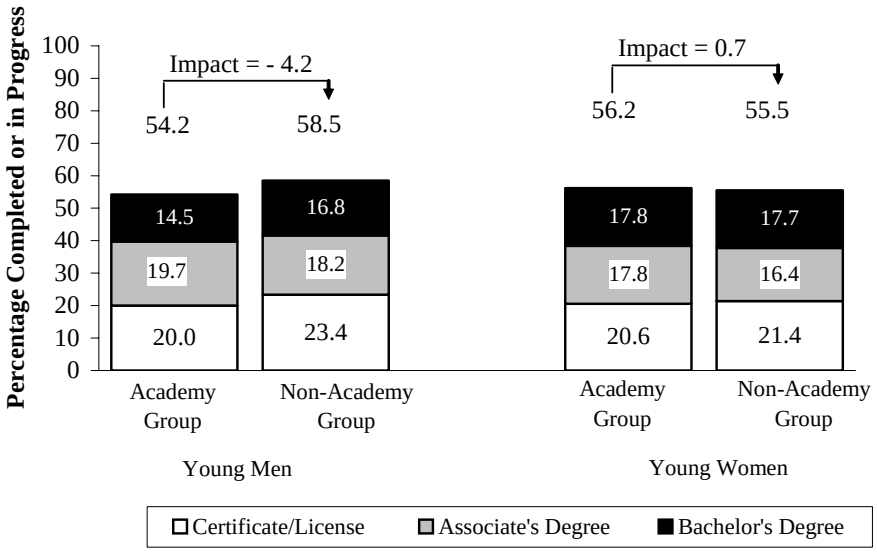
Exhibit ES.2 shows that the overall high school completion rates were very similar for young men and young women. The young women were somewhat more likely to graduate from high school on time, but the Career Academies did not have an impact on on-time graduation rates for either group. It should be noted that the 4.7 percentage point reduction in late graduation rates for young men was balanced by a slight increases in on-time graduation and GED receipt rates.

Career Academies Evaluation

Exhibit ES.2

Impacts on Educational Attainment, by Gender





(continued)

Exhibit ES.2 (continued)

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey.

NOTES: Statuses reflect the 48-month period following scheduled high school graduation for each sample member.

Rounding may cause slight discrepancies in calculating sums and differences.

A two-tailed t-test was applied to differences between the Academy and non-Academy groups (impacts). Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Students must have earned a high school diploma or GED to be considered enrolled in a post-secondary education program.

A credential was considered "in progress" if the student reported being enrolled in a program within three months of the end of the follow-up period and expected to complete the credential.

Exhibit ES.2 also indicates that the young men experienced a slight decline in the rates at which they completed, or were still working toward, post-secondary credentials. In addition to being relatively small and not statistically significant, the difference also reflects somewhat higher attrition rates among those in the non-Academy group, which may further erase the slight reduction in completion rates over time. By the end of the follow-up period, over half the young men in the sample had earned a post-secondary credential or were still working on one. Overall, the substantial, positive impact on labor market outcomes for young men does not appear to have come at the expense of systematically reducing their prospects for post-secondary education.

- **The Career Academies modestly reduced enrollments in post-secondary education among those who entered the programs at highest risk of dropping out of high school. This does not appear to have diminished the Academies' impact on employment and earnings for this subgroup.**

At the end of the follow-up period, 40 percent of the high-risk Academy group and 49 percent of the high-risk non-Academy group had either completed a post-secondary credential or were still working on one. Although this 9 percentage point reduction in educational attainment is not statistically significant, it is sufficiently large to raise a caution about potential tradeoffs between education and work. Most of this difference, however, occurred in the rates of completing a short-term training license or certificate. By the end of the four-year follow-up period, the reduction evident in these limited education credentials does not appear to have diminished the increased earnings power that accrued to the Academy group. In fact, the Career Academies' impact on earnings for this subgroup in the last year of follow-up was substantially larger than in any of the preceding three years.

Implications of the Findings

- **The findings provide convincing evidence that increased investments in career-related experiences during high school can improve post-secondary labor market prospects.**

A growing body of descriptive analyses suggests that increases in career-technical course-taking and engagement in higher-quality, work-based learning programs during high school are associated with better labor market outcomes after high school. This evaluation finds that Career Academies produced impacts on monthly earnings for young men that exceed the differences in earnings that have been found between young workers with one or two years of post-secondary education and those who only have a high school diploma. Although one should not conclude from this that Career Academies can substitute for post-secondary education below the associate's-degree level, the findings seem to suggest that Academies do produce benefits in the labor market that are commensurate with those associated with continuing investment in post-secondary programs.

- **The findings demonstrate the feasibility of accomplishing goals of school-to-career and career-technical education without compromising academic goals.**

Like many approaches to education reform, the Career Academy model has many and varied goals. Career Academies aspire to prevent students from dropping out of high school and to prepare them for college and other post-secondary education opportunities. At the same time, Career Academies provide students with an explicit introduction to the world of work and try to furnish them with skills and connections to help them navigate the transition from high school to successful employment. Many critics of school-to-work transition initiatives and career-technical programs contend that programs like Career Academies track students into classes and work experiences that orient them toward immediate entry into the labor market. Such criticism sometimes suggests that this orientation comes at the expense of preparation for and opportunities to attend college. In this study, however, the high rates of enrollment in post-secondary education programs and the sustained impacts on employment and earnings suggest that such tradeoffs need not occur.

- **The findings suggest that Career Academies should make special efforts to serve students who are at risk of dropping out of high school.**

One theme that has evolved from the Career Academies Evaluation is that students who enter the programs at high or medium risk of dropping out of high school tend to benefit most from exposure to the programs. Earlier findings indicate that high-risk students experienced modest reductions in dropout rates and increases in attendance and course-taking (although these did

not translate into impacts on graduation or post-secondary enrollment rates). The present findings indicate that the Academies' strong labor market impacts were concentrated among the high- and medium-risk subgroups. Even for the high-risk subgroup, impacts on labor market outcomes grew over time, despite the modest reductions in post-secondary education enrollments.

These findings suggest that Career Academies should make greater efforts to attract and retain high- or medium-risk students. At the same time, however, targeting such students exclusively might lower expectations for the program among teachers, students, and parents. More important, the implementation research for this evaluation indicates that the Academies draw much of their power to improve interpersonal supports and increase engagement from the diversity of their student bodies.

Several school districts and school reform initiatives around the country are now attempting to convert entire high schools into clusters of Career Academies. Instead of giving students the option of enrolling in traditional general or vocational programs, these wall-to-wall Academies offer students a choice among different Academies that combine academic and career-related curricula. This approach may have the greatest potential for maximizing high-risk students' access to the programs (because all students would be required to enroll in an Academy) while ensuring that the Academies include a broad mix of students. These high schools and reform initiatives, however, face the related challenges of preventing high-risk students from being tracked into poorly implemented Academies and of ensuring a high level of implementation on a larger scale.

- **The Career Academies Evaluation demonstrates the feasibility, benefits, and challenges of conducting a longitudinal random assignment evaluation of a prominent high school reform approach.**

The Career Academies Evaluation is one of the few longitudinal random assignment evaluations of a school-based education intervention. Without the random assignment research design and the extended follow-up period, it is likely that an alternative approach to the study would have yielded misleading findings and conclusions. For example, statistical comparisons with national data might suggest that the Career Academies represent a substantially better educational opportunity than many alternatives available to similar students from similar schools and school districts across the country. The availability of a valid control group — determined by the random assignment design of the evaluation — shows that the Career Academies in this study tended to attract students (by a combination of self-selection and program selection) who were likely to do well in high school and post-secondary education even if they had not been exposed to the Career Academies.

Next Steps for the Evaluation

The full story of Career Academies' effectiveness may still be unfolding. The young men and women in the study sample were about 22 years old at the time they were contacted for the most recent follow-up survey. Most were still somewhat unsettled in their transition to self-sufficient adulthood. Nearly one-third of these young people were still enrolled in education programs, and most had not yet started families. Very few had settled on a long-term career. These factors leave unanswered a number of important questions about the longer-term effects of the Career Academies: Will the substantial impacts on employment and earnings outcomes for young men continue as they become more dependent on higher-wage, career-oriented jobs to support their families? Will these benefits eventually accrue to young women? Will the young men and women who were engaged in Career Academies remain in (or return to) post-secondary education programs at higher rates than their counterparts from the control group?

To address these and other issues, the evaluation is collecting data on students' education and labor market experiences over an additional four-year period. This will mark an eight-year post-high school follow-up period and nearly 12 years since these young people first entered the study sample. The goal of this ongoing work is to determine whether the Career Academies enable students to make better choices about post-secondary education and employment and whether their choices lead to higher educational attainment and entry into higher-wage, more career-oriented jobs.

Full Report

This report examines the impact that Career Academies — a prominent high school reform and school-to-work transition initiative — have on educational attainment and post-secondary labor market experiences of young people. The follow-up period and research design for this study are rare in studies of high school programs, including programs that aim to improve youth transitions from school to further education and work. The findings cover a four-year post-high school follow-up period, which provides a unique opportunity to examine how Career Academies influence students' capacity to sustain their engagement in post-secondary education programs and improve their labor market prospects. Because the findings that are presented in this report are derived from a random assignment field experiment, they provide uniquely reliable indicators of the effectiveness of the Career Academy approach.

As this report goes to press, education policymakers and practitioners are pursuing a range of far-reaching reform strategies to improve American high schools, particularly those that serve students who are at risk of leaving high school without the skills needed to pursue further education and make successful transitions to the world of work. Some of these initiatives aim to reform high schools through comprehensive changes in organization and governance. Other reform efforts focus on changes in curricula and the learning goals that students are required to attain. Still others seek to reconstitute the relationship between high schools and their communities, including local employers and social institutions. Yet very little is known about the potential effects that these initiatives might have on students both during and after their high schools years.

Many of the reform strategies being considered include principles embedded in the Career Academy approach. Others incorporate Career Academies or Academy-like programs directly into their reform model or system. In addition, Career Academies continue to proliferate at a rapid pace, with public support and under the guidance of national and local intermediary organizations. These trends have increased the demand for more reliable evidence about the long-term effectiveness of Career Academies.

MDRC began this uniquely rigorous evaluation of the Career Academy approach in 1993. The study includes a diverse set of nine high schools across the country and the Career Academies located in them. The evaluation's primary goal is to provide policymakers and educators with reliable evidence about how Career Academies affect students' performance and engagement during high school and their subsequent transitions to post-secondary education and the labor market. The study also aims to provide information about how these programs operate and to examine the factors that may enhance or undermine their effectiveness. The evaluation is funded by the U.S. Departments of Education and Labor and by 17 private foundations and organizations.

This report — the sixth formal report from the study — describes the Career Academy approach and highlights the key features of the evaluation that underlie its rigor and the relevance of its findings. Box 1 outlines the core features of the Career Academy model,[1] while Box 2 gives an overview of the evaluation's design and the data sources used in this report.[2] To provide a context for interpreting the impacts that Career Academies had on post-secondary education and labor market outcomes, the following section summarizes prior reports' findings about how Career Academies influenced students' high school experiences. The bulk of this report focuses on the impacts that Career Academies had on a range of educational attainment and labor market outcomes for young people during the four years following their scheduled graduation from high school. A short concluding section discusses some of the implications that the study's findings may have for education policy and practice.[3]

Impacts on High School Experiences and Outcomes

The first three reports from the Career Academies Evaluation describe the implementation of the core elements of the Career Academy approach and assess the extent to which these elements provided students, teachers, and employers with the types of supports and learning opportunities outlined in Box 1.[4] The fourth report examines the impacts that the participating Academies had on students' performance and engagement through the end of their 12th-grade year in high school.[5]

The findings from these earlier reports provide an essential context for understanding the pattern of Career Academy effects on educational attainment and post-secondary labor market outcomes that are discussed in the present report. In particular, they shed light on the facets of students' high school experiences and outcomes that Career Academies affected or did not affect. Differences (and the lack of differences) in the experiences of students in the Academy group and the non-Academy group are fundamental antecedents to the effects that Career Academies might have had as these young people moved beyond high school into post-secondary education programs and the world of work.

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[1]For a detailed discussion of the history and conceptual framework underlying the Career Academy approach, see Stern, Dayton, and Raby (2003); Kemple (1997); Kemple, Poglinco, and Snipes (1999); and Kemple and Snipes (2000).

[2]For a detailed discussion of the research design, the sites, the students in the study sample, and other data sources used in the evaluation, see Kemple and Rock (1996); Kemple (1997); Kemple and Snipes (2000); and Kemple (2001).

[3]See the Technical Resources for this report (Kemple and Scott-Clayton, 2004) for information about the samples and the analytical methods used to derive the findings, as well supplementary exhibits presenting detailed findings for the full study sample and various subgroups.

[4]See Kemple and Rock, 1996; Kemple, 1997; and Kemple, Poglinco, and Snipes, 1999.

[5]See Kemple and Snipes, 2000.

Box 1

The Career Academy Approach

Context

Background: The first Career Academy was launched in Philadelphia in 1969. It is estimated that there are now over 2,500 Academies across the country.

Aims: Career Academies stand at the intersection of several high school reform efforts aimed at (1) building school-to-work systems, (2) reconstituting career and technical education, (3) dividing large high schools into small learning communities, and (4) promoting comprehensive school change.

Targeted population: Most Career Academies are located within urban and large-city high schools serving low-income students in grades 9 through 12. Academies typically serve a cross-section of 150 to 200 students from these schools. A growing number of Academies are being established in suburban and rural communities.

Features	Supports and Learning Opportunities
School-within-a-school organization • A small learning community is formed within the larger high school by clustering 3 to 5 teachers and 50 to 75 students per grade in grades 9 through 12 or grades 10 through 12. • Teachers are drawn from various academic and career-related disciplines and remain with students from year to year. • One teacher assumes lead responsibility for administrative tasks and serves as liaison with school and district administrators and employer partners. • Students take 2 to 4 courses per year in the Academy and their remaining courses in the regular high school. • Block scheduling of the Academy-oriented classes in the morning is followed by regularly scheduled classes in the afternoon. • Efforts are made to encourage parental involvement.	**Interpersonal support** • Academies aim to function as "communities of support" for students and teachers. • Academies attempt to ensure that students get personalized attention from teachers; teachers have higher expectations; and students collaborate with peers. • Academies aim to ensure that teachers are supported by opportunities for professional collaboration and by adequate resources, and that they have the capacity to influence instructional and administrative decisions.

(continued)

Box 1 (continued)

Features	Supports and Learning Opportunities
Academic and technical curricula based on a career theme • Students take 3 or more academic courses and at least 1 career- or occupation-related course per year • Occupational classes are structured around a range of areas in a career field rather than training in specific job skills. • A career theme is chosen on the basis of local employment needs and demand for expertise. Among the career themes are health professions, business and finance, electronics, travel and tourism, and information technology.	**Focused curricula and enriched learning opportunities** • Academies attempt to break down the dichotomy between academic and technical curricula by bringing academic rigor to career-related courses and applied learning opportunities to academic courses. • Academy curricula are intended to ensure that students meet core academic requirements for graduation and college preparation. • Non-Academy courses attempt to provide a coherent sequence of technical and occupation-related classes. • Curricula attempt to provide applied learning opportunities, including problem-solving skills, the use of computers, and work on long-term projects.
Employer partnerships • Formal relationships with a group of employers in the community aim to support Academy programs and to sponsor work- and career-related activities for students. • Employer partners contribute funds and other material resources and participate as speakers, supervisors of student interns, and student mentors. • Many Academies create formal advisory boards to help guide the development of curricular and extracurricular activities. • Academy staff and employer representatives work together to develop career-awareness and development activities, including field trips, job shadowing, and outside speakers from the business community.	**Career awareness and work-based learning opportunities** • Career awareness and development activities aim to improve students' understanding of the world of work and occupations within the program's broad career theme. • Through work-based learning programs developed in collaboration with employer partners, students are placed in jobs (or series of short-term jobs) that expose them to occupations.

Several findings reported previously indicate that the Career Academies in the evaluation changed students' experiences during high school in ways that are strongly consistent with the short-term goals of the Academy approach. For example, compared with their non-Academy counterparts:

- Students in the Academy group reported higher levels of interpersonal support from teachers and peers.
- Academy students were more likely to combine academic and career or technical courses.
- Academy students were substantially more likely to be exposed to a range of career awareness and development activities, both in and outside school, and to work in jobs that were connected to school.
- For students who entered the programs at high risk of dropping out, the Academies increased the likelihood of staying in school through the end of the 12th-grade year, improved attendance, and increased the number of credits earned toward graduation.
- For students at medium or low risk of dropping out, the Academies increased career and technical course-taking and participation in career development activities without reducing academic course-taking.

Previously reported findings also indicate several limitations on the Academies' implementation and effectiveness:

- One-third of the students who initially enrolled in the Academies left the programs before the end of their 12th-grade year.
- The curricula and instructional strategies used in the Academies (in both academic and career or technical courses) were generally similar to those offered in the rest of the high school.
- The Academies had no impact on standardized test scores.
- Some Academies that did not substantially increase interpersonal supports from teachers and peers reduced attendance rates and academic course-taking for some students.

Not surprisingly, the Academies appear to have been most effective at influencing those aspects of school functioning and student and teacher experiences that are closest to the core features of the approach. For example, the Academies' school-within-a-school organization ap-

pears to have created communities of support for teachers and students. In this context, students were more highly engaged in school, which was reflected in high attendance rates, low dropout rates, and — in the words of several students — a sense of being in a "family-like" atmosphere. Teachers, too, saw the Academies as a "learning community" in which they collaborated with colleagues and were able to give students more personalized attention. The findings suggest that the school-within-a-school structure and the interpersonal supports that evolved from it may have been important preconditions for the implementation and effectiveness of other features of the Career Academy approach. In and of themselves, however, these interpersonal supports do not appear to have had a direct impact on student performance.

The Career Academies in this evaluation had the strongest and most pervasive effects on the engagement of high-risk students. For these students, the Academies increased attendance and credits earned in both academic and career or technical courses, and they kept a higher proportion of those enrolled in school through the end of 12th grade. For the medium- and low-risk students, the Academies were able to increase exposure to career-related courses and career development experiences without reducing the likelihood of completing at least a basic academic core curriculum.

Employer partnerships — another key feature of the Career Academy approach — offered employers structured, concrete opportunities to engage in the educational mission of high schools. These partnerships provided students with a broad array of career awareness and development experiences both in and outside school, including work-based learning internships. Academy students were much more likely than their non-Academy counterparts to be exposed to such experiences as job shadowing, career fairs, guest speakers from local businesses, and instruction in how to look for and apply for a job, prepare a résumé, and interview. Academy students were also provided with increased exposure to individual employers as well as to information about the types of career opportunities in a given field.

The Academies in this evaluation appear to have had less influence on curricular content and teachers' instructional practice than on the measures mentioned above. Academy students were more likely to take career-related courses than their non-Academy peers, but the academic and career-related courses that they took were generally typical of those offered in the regular school environment — probably because Academy teachers were bound by the same requirements as their non-Academy counterparts regarding the scope and sequence of the curriculum.

Similarly, although the Academies were more likely to expose students to applied and work-related learning activities, they typically did not truly integrate academic and career-related curricula and instructional practice in ways consistent with practices that have been iden-

Box 2

The Career Academies Evaluation

Design

The Career Academies Evaluation uses a random assignment research design — the best way to ensure that there were initially no systematic differences between the two groups that make up the study sample. Each of the students in the sample applied for a place in one of the participating Career Academies and was deemed to be appropriate for the programs. Because more applicants were appropriate than the programs could serve, a lottery was used to choose which students would be invited to enroll. The students who enrolled make up the study's Academy group. The remaining students (about 45 percent of the applicant pool) continued or enrolled in the high schools' regular education programs and constitute the study's non-Academy control group. The outcomes for the non-Academy group are the best indicators of how students in the Academy group would have fared if they had not had access to the programs. Therefore, the impacts — that is, the differences in outcomes between the Academy and the non-Academy groups — represent the changes that the Career Academies produced over and above what students were likely to achieve in non-Academy environments.*

Sites

Each of the nine high schools in this evaluation is located in or near a large urban school district with substantially higher percentages of African-American and Hispanic students than exist in school districts nationally, as well as higher drop-out rates, higher unemployment rates, and higher percentages of low-income families. The schools were selected strategically on the basis of several criteria:†

- The schools had implemented and sustained the core features of the Career Academy approach for at least two years.
- There was a clear contrast — along the core dimensions of the Academy model — between the Career Academy and other programs within the high school.
- The Career Academy served a diverse population of students but made explicit efforts to include students who were perceived to be at risk of dropping out.
- The high school and its Career Academy were willing and able to accommodate random assignment and other key features of the evaluation design.

(continued)

Box 2 (continued)

As a group, the participating sites reflect many of the conditions under which Career Academies have been implemented across the country, and individually the sites capture much of the variation in the Academy approach as it has been adapted to local needs and circumstances.

Students

The student populations in the participating Career Academies tend to reflect the ethnic, gender, and socioeconomic characteristics of their host high schools, which are diverse. Students came to the programs with varying backgrounds, school-related experiences, and educational aspirations. Some students were already highly engaged in school when they applied for the Academies. Key goals of Academies are to prepare such students for college and to provide them with career-related learning experiences and credentials that will make them more competitive in the labor market. Other Academy applicants were already on a path toward dropping out or ending their education after high school. Academies aimed to "reengage" such students, providing them with more applied learning experiences and encouraging them to develop higher aspirations for education and employment.[‡]

Data Sources

The primary data for this report were obtained from a survey administered to sample members approximately 48 months after their scheduled graduation from high school (eight years after they entered the study). The Career Academies Evaluation Four-Year Post-High School Follow-Up Survey asked sample members:

- Whether and when they graduated from high school or received a General Educational Development (GED) certificate and whether and when they enrolled in post-secondary education programs and institutions. Students who were enrolled in post-secondary education programs were asked about the programs' characteristics and about their levels of engagement.
- Information about their work experiences during the four years after scheduled graduation from high school, including which month and year they started each job that they held during this period, which month and year they left each job, the number of hours they worked per week, the number of weeks they worked per month, and the hourly wage they earned.

(continued)

Box 2 (continued)

- Information about the industries in which they worked for each job they held during the four years after scheduled graduation from high school, the titles or types of job they had, and the type of work they performed. For the most recent jobs respondents held, the survey also asked about the types of skills they used, how their employment might have been connected to career-related activities during high school, and how their work experience might be preparing them for the future.

- Information about other experiences in their lives and their plans for the future.

The findings in this report are based on data collected from 1,458 youth who completed the survey. This represents 83 percent of the 1,764 young people in the full study sample: 83 percent of the Academy group and 82 percent of the non-Academy group. Response analysis indicates that there were no systematic differences in background characteristics between Academy and non-Academy group members who responded to the survey. The relatively high response rates in both the Academy and the non-Academy group — and the comparability of the Academy and non-Academy group members who responded — afford a high degree of confidence that the survey data yield valid estimates of the Career Academies' impacts.[§]

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*For a detailed description of how the random assignment procedures were implemented for the evaluation, see Kemple and Rock (1996).

[†]For a discussion of the criteria and process used to select sites for this study, see Kemple and Rock (1996).

[‡]For a more complete listing of background characteristics of the full study sample, see Unit 1 in the Technical Resources for this report (Kemple and Scott-Clayton, 2004).

[§]For a more detailed discussion of the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey response rates and analysis issues related to data availability, see Unit 1 in the Technical Resources for this report (Kemple and Scott-Clayton, 2004).

tified in other research.[6] Such integration requires offering more extensive professional development opportunities to teachers — over and above the in-service workshops normally available through school and district resources — than most of the Academies could provide. Other professional development opportunities, such as shared planning time for teachers, were focused on student-related concerns and on coordinating the career development and employer-related activities.

[6]For a review of research on approaches for integrating academic and vocational education, see Grubb (1995a, 1995b).

Given the similarity between Academy and non-Academy academic curricula and instructional practice, it is not surprising that the Academies did not affect students' standardized test scores. Still, Academy students performed at least as well as their non-Academy counterparts on standardized tests, and they received the added benefits of participating in a combined academic and career-related curriculum and in a series of career development activities.

Finally, only 55 percent of students who were selected to enroll in the Career Academies remained in those programs through their scheduled graduation. About 15 percent of the applicants who were randomly assigned to the Academy group never enrolled at all, and another 30 percent enrolled but subsequently left the programs before their scheduled graduation. Only a small percentage of those who left the Academies dropped out of high school altogether. It is unclear how much of the attrition from the Academies could have been influenced or avoided by the programs themselves. The majority of students who enrolled in a Career Academy and then chose to leave did so because they did not like the program or because they preferred other classes or programs. It is not clear that their choices reflected shortcomings of the Academy model or its implementation: Many students who left the Academies did so because they wished to take advantage of other classes, programs, or opportunities that better suited their interests and needs. Student mobility — usually due to family circumstances beyond the control of the programs — was another leading reason that students left the Career Academies.

The high attrition rates may suggest, however, that there is not great demand for Academies, at least under circumstances where students can choose to leave and staff can ask them to leave. In any case, these are the circumstances under which Career Academies typically operate. As a result, Academies may be able to influence students' behavior and performance for only a year or two before students move on to other opportunities. In an effort to provide the most rigorous and policy-relevant information about Academies' potential to affect students' behavior, this evaluation takes the reality of attrition squarely into account by including in the analysis all students who were randomly assigned to Academies, whether they remained enrolled or not.

Impacts on Labor Market Outcomes

This section of the report begins with a summary of the impacts that the Career Academies had on labor market outcomes for the full study sample. The key labor market outcomes include average monthly earnings and the core sources of monthly earnings: months employed during the follow-up period, hours worked per week, and hourly wages. The section then discusses in more detail the labor market impacts for the subgroups of young men and young women. It concludes with a brief review of the labor market impacts for subgroups defined by the background characteristics associated with the risk of dropping out of high school.

- **The Career Academies produced positive and sustained impacts on a range of labor market outcomes.**

Exhibit 1 displays the impacts that Career Academies had on average monthly earnings and on each of the key components of earnings (months employed, hours worked per week, and hourly wages).[7] These reflect averages over the entire 48-month period following scheduled high school graduation. The left side of the exhibit shows that the Academy group earned an average of $107 per month more than the non-Academy group. This represents a 10 percent increase in monthly earnings over the non-Academy group's average of $1,039 per month. Over the 48-month follow-up period, this increase in monthly earnings totaled over $5,000.

The right side of Exhibit 1 indicates that the impact on monthly earnings was driven by a combination of increases in the number of months employed, hours worked per week, and hourly wages. Further analyses (not shown in the exhibit) reveal that more than 40 percent of the earnings impact was due to the increase in hourly wages and that another 24 percent was due to the increase in hours worked per week.[8] The remainder of the impact on monthly earnings was associated with the fact that the Academy group was employed for an average of just over one extra month during the follow-up period, compared with the non-Academy group.

Exhibit 2 shows that the Career Academies' impacts on average monthly earnings persisted throughout the 48-month post-high school follow-up period. It shows, first, that the monthly earnings for both the Academy and the non-Academy group increased substantially over the follow-up period. Average monthly earnings for both groups about doubled from the start of the follow-up period to the end. The solid line in the exhibit, however, shows that — during each month of the follow-up period — the young people in the study's Academy group earned more, on average, than those in the non-Academy group (represented by the dashed line).

The survey that was administered to the study sample for this report also asked sample members to provide some detailed information about the jobs they held near or at the end of the follow-up period.[9] Overall, it appears that the jobs held by Academy and non-Academy group members were similar. On average, sample members from both groups had been working at

[7] Unit 3 of the Technical Resources for this report (Kemple and Scott-Clayton, 2004) includes supplementary tables that provide more detailed labor market impact findings for the full study sample.

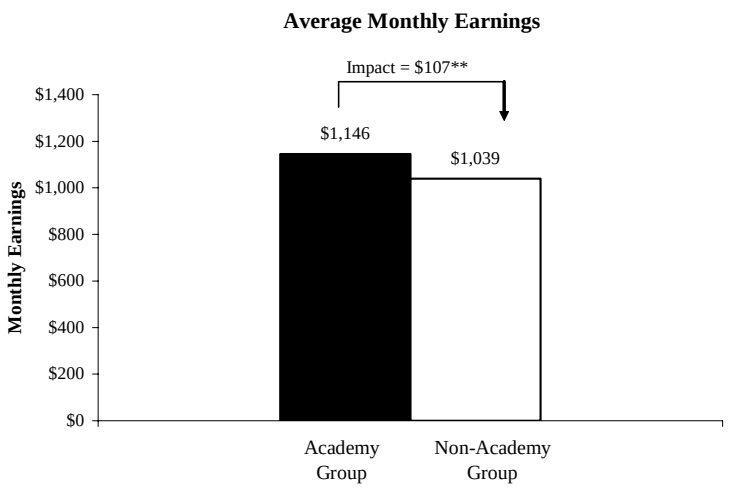
[8] The impacts on the components of earnings (months worked, hours worked per week, and hourly wages) were decomposed to determine their contributions to the overall earnings impact. These calculations assume that the components of earnings are independent. It may be that the Career Academy increases in work effort (hours worked) also helped increase hourly wages.

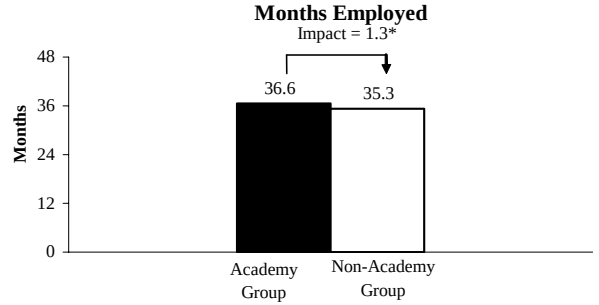
[9] Unit 3 of the Technical Resources for this report (Kemple and Scott-Clayton, 2004) provides a list of these job characteristics for both groups (Exhibit 3.5). The information on job characteristics discussed in this section of the report and presented in the Technical Resources is based only on the sample members who were employed during the follow-up period and focuses only on the characteristics of the last job they held. As a result, differences in job characteristics between Academy and non-Academy groups do not represent valid indicators of Career Academy impacts (or lack of impacts).

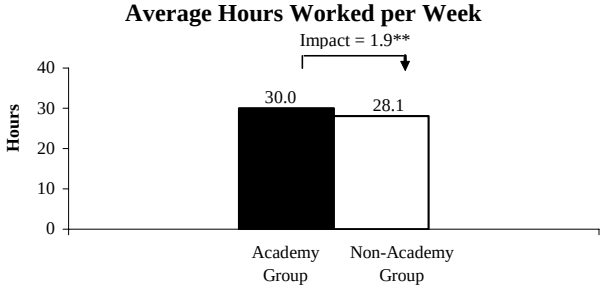
Career Academies Evaluation

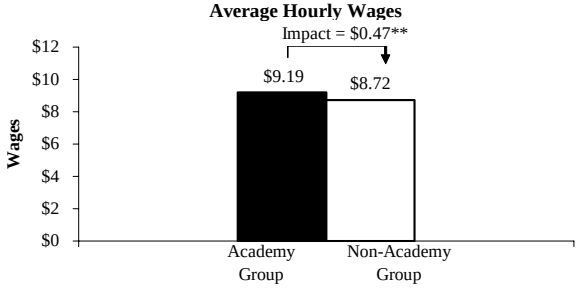
Exhibit 1

Impacts on Average Monthly Earnings and Components of Earnings for the Full Study Sample









SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey.

NOTES: Measures reflect averages over the 48-month period following scheduled high school graduation for each sample member. A two-tailed t-test was applied to differences between the Academy and non-Academy groups (impacts). Statistical significance levels are indicated as *** = 1 percent; ** = 5 percent; and * = 10 percent.

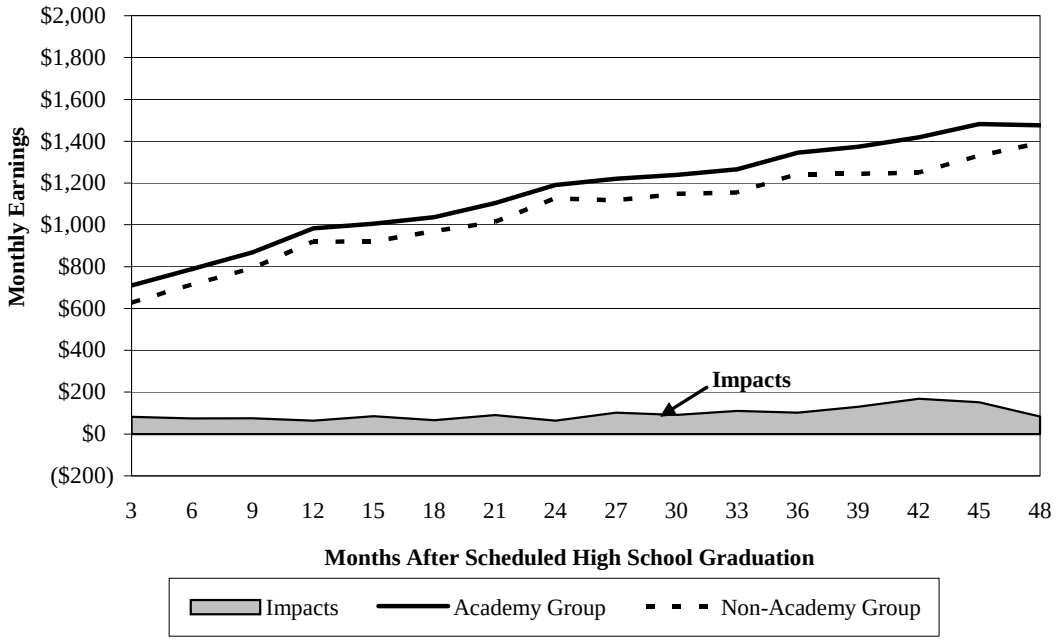
Monthly earnings were calculated by multiplying each sample member's reported hourly wage times the hours worked per week times the number of weeks worked per month. For months in which sample members did not report being employed, zero values were used for monthly earnings and the components of earnings.

Hourly wages and weekly hours worked reported by sample members at the conclusion of each job were applied to the full duration of the job. Thus, if wages or hours increased or decreased during the job, these measures may over- or underestimate true monthly earnings. Additional analyses indicate that the pattern of impacts was not sensitive to various assumptions about changes in wages or hours.

Career Academies Evaluation

Exhibit 2

Month-by-Month Impacts on Average Monthly Earnings for the Full Study Sample



SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey.

NOTES: Measures reflect the 48-month period following scheduled high school graduation for each sample member. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Differences in monthly earnings are significant at the .1 level or lower in 37 out of the 48 months.

Monthly earnings were calculated by multiplying each sample member's reported hourly wage times the hours worked per week times the number of weeks worked per month. For months in which sample members did not report being employed, zero values were used for monthly earnings and the components of earnings.

Hourly wages and weekly hours worked reported by sample members at the conclusion of each job they held were applied to the full duration of the job. Thus, if wages or hours increased or decreased during the job, these measures may over- or underestimate true monthly earnings. Additional analyses indicate that the pattern of impacts was not sensitive to various assumptions about changes in wages or hours.

their current or most recent job for about 18 months, and between 83 percent and 85 percent of both groups were working full time. Both groups experienced an increase in monthly earnings of nearly 24 percent over the time they held their jobs, although monthly earnings for the Academy group consistently outpaced the earnings of the non-Academy group. About 60 percent of workers in both groups held jobs that provided a health insurance plan, and just over 40 percent of both groups (43 percent of the Academy group and 41 percent of the non-Academy group) reported working in a job that provided a full package of benefits, including a health insurance plan, sick and vacation days, and a retirement plan.

The distribution of jobs across occupational areas was similar for sample members in both groups. For example, approximately 30 percent of the Academy group reported working in office and administrative support occupations, and about 25 percent worked in management or professional occupations. Nearly 20 percent of the Academy group worked in construction-related trades; about 16 percent worked in sales-related occupations; and 11 percent worked in food and personal service occupations. Approximately 70 percent of sample members in both groups reported that their job involved computer use, and less than 30 percent indicated that their job often involved physically demanding tasks.

In addition to monthly earnings and hourly wages, two other characteristics differentiated the jobs held by the Academy group from those held by the non-Academy group. First, sample members in the Academy group were more likely to be working in a job that was directly related to a program or experience in which they were involved during high school: 27 percent of the Academy group reported this to be the case, compared with 22 percent of the non-Academy group. This also shows, however, that the majority of those in the Academy group were not working in jobs related to the career theme of the Academy program for which they were selected. Second, about 44 percent of the Academy group reported that they were very likely to be promoted in the next year, compared with 37 percent of the non-Academy group. This suggests that the Academy group may continue to experience higher earnings and wages in the future.

- **The impacts on labor market outcomes were concentrated among young men in the study sample.**

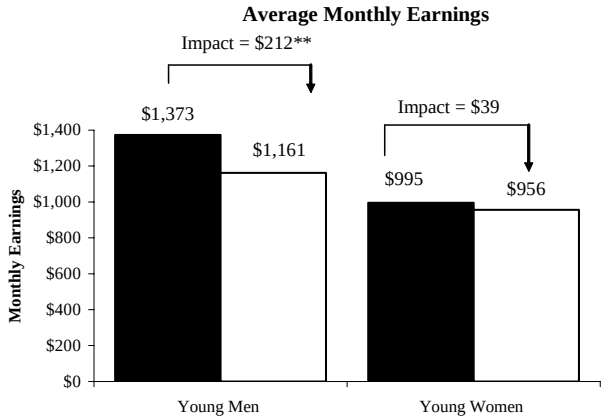
Exhibit 3 displays the Career Academies' impacts on average monthly earnings (and the key components of earnings) for young men and young women in the study sample, respectively.[10] The left set of bars in each portion of the exhibit shows that, for young men, the Academies produced statistically significant increases in monthly earnings, months employed, hours

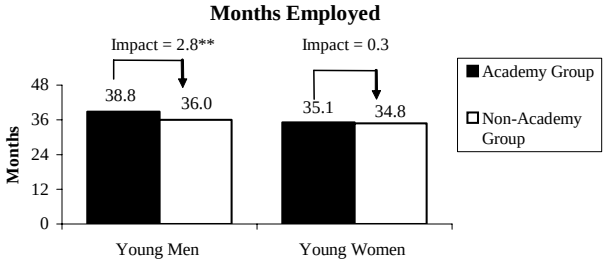
[10] Unit 4 of the Technical Resources for this report (Kemple and Scott-Clayton, 2004) includes supplementary tables that provide detailed impact findings for young men and young women in the study sample.

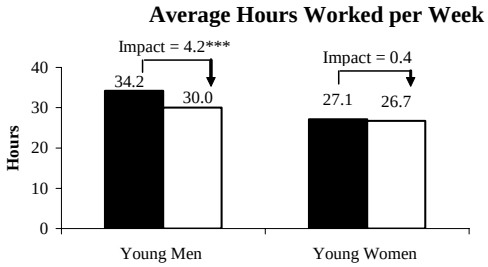
Career Academies Evaluation

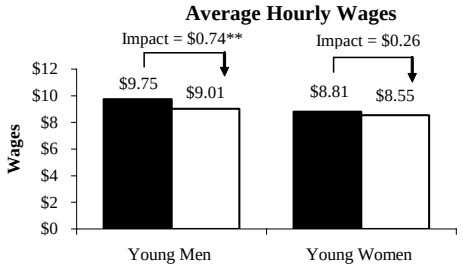
Exhibit 3

Impacts on Average Monthly Earnings and Components of Earnings, by Gender









SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey.

NOTES: Measures reflect averages over the 48-month period following scheduled high school graduation for each sample member. A two-tailed t-test was applied to differences between the Academy and non-Academy groups (impacts). Statistical significance levels are indicated as *** = 1 percent; ** = 5 percent; and * = 10 percent.

Monthly earnings were calculated by multiplying each sample member's reported hourly wage times the hours worked per week times the number of weeks worked per month. For months in which sample members did not report being employed, zero values were used for monthly earnings and the components of earnings.

Hourly wages and weekly hours worked reported by sample members at the conclusion of each job were applied to the full duration of the job. Thus, if wages or hours increased or decreased during the job, these measures may over- or underestimate true monthly earnings. Additional analyses indicate that the pattern of impacts was not sensitive to various assumptions about changes in wages or hours.

worked per week, and hourly wages. Specifically, the Career Academies produced an increase of $212 in average monthly earnings for young men. This amounts to a substantial 18 percent increase over and above the average earnings of $1,161 per month for young men in the non-Academy group. This increase totaled more than $10,000 in additional earnings for males in the Academy group over the 48-month follow-up period.

The magnitude of the impacts on monthly earnings for young men exceeds differences in earnings that have been found in other research between young workers with one or two years of post-secondary education and those who only have a high school diploma.[11] This research indicates that young workers with only a high school diploma or GED earned an average of between $100 and $150 per month less than those with one or two years of post-secondary education.

Exhibit 3 also shows that, for young men, the Academy programs produced sizable increases during the 48-month follow-up period in the number of months employed, hours worked per week (including full-time employment), and hourly wages. Overall, the young men in the Academy group were employed during nearly 39 months (81 percent of the follow-up period), compared with 36 months (75 percent of the follow-up period) for young men in the non-Academy group. Though not shown in the exhibit, young men in the Academy group were employed full time during 33 of the 39 months they were working, compared with only 28 of 36 months for the non-Academy group. Young men in the Academy group worked an average of about 34 hours per week, compared with 30 hours per week for young men in the non-Academy group.

The Career Academies' impact on average monthly earnings is a function of the combined impact that the programs had on the number of months employed, hours worked per week, and hourly wages. Further analyses were conducted to examine the proportion of the impact on average monthly earnings that was likely to be due to each of these components independently. These analyses indicate that approximately 35 percent of the impact on average monthly earnings was associated with the increases in hours worked per week and that nearly 28 percent was associated with the Career Academies' impact on hourly wages. In other words, the increase in earnings is likely to have been a function of the Career Academies' helping young men obtain better-paying jobs and jobs that afforded them the opportunity to work more hours (more often full-time jobs rather than part-time jobs). The remaining impact on average earnings was due to an increase in the number of months employed.

[11] See Pond, Sum, Mykhaylo, and Meredith, 2002.

Finally, the top graph in Exhibit 4 shows that the Career Academies' impact on monthly earnings for young men persisted throughout the 48-month follow-up period. It shows that while monthly earnings more than doubled for both groups, young men in the Academy group consistently earned more throughout the period than young men in the non-Academy group.

- **Overall, the Career Academies did not have an impact (positive or negative) on labor market outcomes for young women.**

The right set of bars in each chart in Exhibit 3 and the bottom graph in Exhibit 4 depict substantially different patterns of labor market outcomes and impacts for young women in the study sample. First, Exhibit 3 shows that monthly earnings and each of the components of monthly earnings were lower for young women in the sample than for young men. This was true in both the Academy and the non-Academy group. For example, over the 48-month follow-up period, young men in the non-Academy group earned an average of $205 more per month than young women in the non-Academy group. This accumulated to nearly $10,000 more in earnings for young men in the non-Academy group. The gender difference in the Academy group was even larger: During the 48-month follow-up period, young men in the Academy group earned approximately $18,000 more than young women in the Academy group.

The difference in average monthly earnings between young men and young women was due, in large part, to differences in employment patterns. As illustrated on the right side of Exhibit 3, the young women in both groups worked during fewer months, and they worked fewer hours per week than did the young men. There are also gender differences in hourly wages. Finally, as shown in Exhibit 4, average monthly earnings for young men increased much more steeply than they did for young women over the follow-up period.

Exhibits 3 and 4 show, on average, that the Academies produced little or no impact (positive or negative) on labor market outcomes for young women. Average monthly earnings, months employed, hours worked per week, and hourly wages were virtually the same for young women in both the Academy and the non-Academy group.

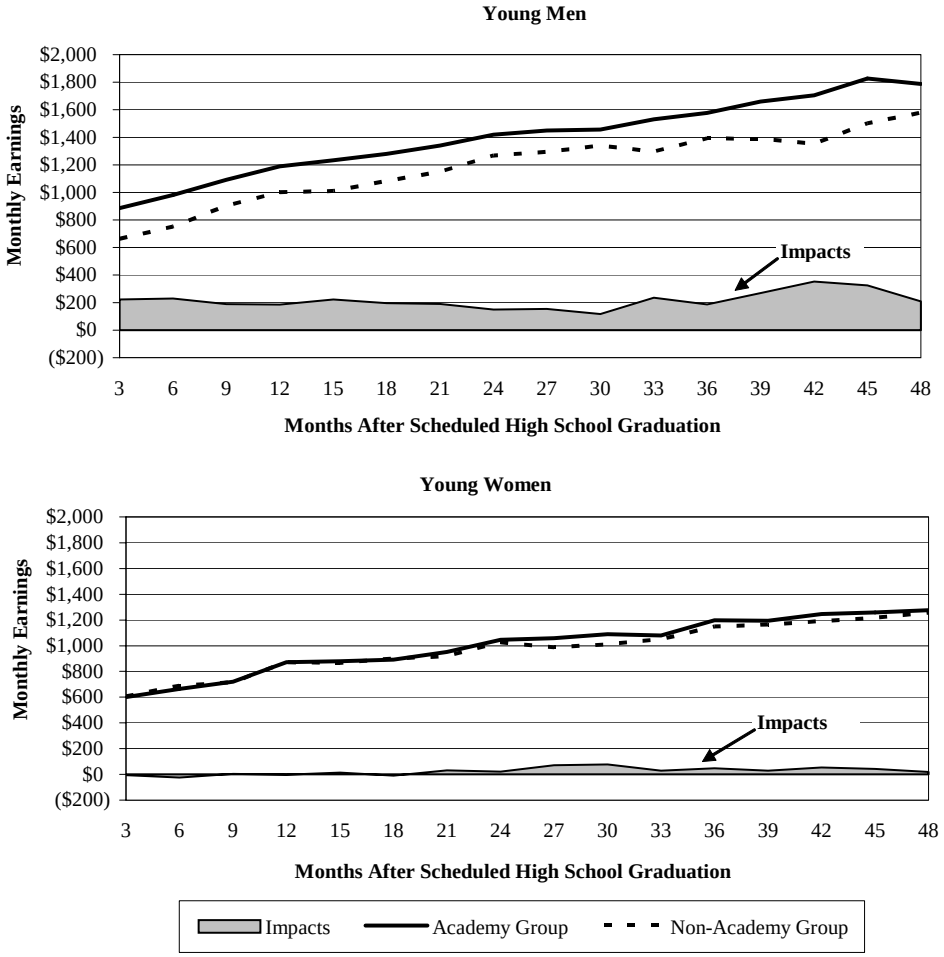
It is not clear why the Career Academies had no overall impacts on labor market outcomes for young women. The evaluation did not find evidence that the Career Academy experience was systematically different for young women than for young men. Nor does it appear that the Career Academies had systematically different impacts on the high school experiences of young women and young men. One hypothesis, however, is that the lack of post-high school labor market impacts for young women may reflect their greater focus, relative to young men, on attending post-secondary education programs or taking care of their children.

Just over 40 percent of the young women in both groups had children, and over 25 percent reported being a single custodial parent. By contrast, only about 27 percent of the young

Career Academies Evaluation

Exhibit 4

Month-by-Month Impacts on Average Monthly Earnings, by Gender



SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey.

NOTES: Measures reflect the 48-month period following scheduled high school graduation for each sample member. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Differences in monthly earnings are significant at the .1 level or lower in 37 out of the 48 months.

Monthly earnings were calculated by multiplying each sample member's reported hourly wage times the hours worked per week times the number of weeks worked per month. For months in which sample members did not report being employed zero values were used for monthly earnings and the components of earnings.

Hourly wages and weekly hours worked reported by sample members at the conclusion of each job they held were applied to the full duration of the job. Thus, if wages or hours increased or decreased during the job, these measures may over- or underestimate true monthly earnings. Additional analyses indicate that the pattern of impacts was not sensitive to various assumptions about changes in wages or hours.

men reported having children, and only 5 percent said that they were single custodial parents. Young women who did not have children spent about 30 months (over 60 percent of the follow-up period) enrolled in post-secondary education programs, compared with only 20 months of post-secondary enrollment for the young men (42 percent of the follow-up period).[12] The substantial time that young women invested in these non-labor market activities, relative to the young men, may have limited the extent to which the young women were able to capitalize on the career development experiences that they had had in the Career Academies.

Further analyses do reveal some noteworthy differences in the employment and earnings patterns of the young women who had children. These analyses suggest that young women who had children may have experienced some boost in their labor market prospects from the Career Academies. Among young women who had children, those in the Academy group were employed for more months during the follow-up period and earned about $107 more per month than those in the non-Academy group. (Note that these differences do not necessarily reflect the impact of Career Academies, because they do not include direct experimental comparisons of Academy and non-Academy group members as determined by random assignment.)[13] Although these differences are not statistically significant, they are similar in magnitude to the impacts for the full sample when averaged across all young men and all young women.

- **Impacts on labor market outcomes were concentrated among sample members who entered the Career Academies at high or medium risk of dropping out of high school.**

Because prior reports from this evaluation are concerned primarily with the impacts that Career Academies had on educational outcomes, they focus on subgroups defined by background characteristics that are associated with dropping out of high school.[14] The student populations in Career Academies tend to reflect the ethnic, gender, and socioeconomic characteristics of their host high schools, which are increasingly diverse. Moreover, with their expanded

[12]It should be noted that the Career Academies did not have impacts on childbearing or months in post-secondary education for either young men or young women. This is discussed later in the report.

[13]The analyses discussed here involve comparisons between groups of young women that were based on childbearing statuses that changed during the follow-up period. Although the Career Academies did not have a statistically significant impact on childbearing, there were modest differences between the Academy and non-Academy groups both in the rates of childbearing and in the characteristics of those who had children and those who did not. Thus, these differences in childbearing rates and characteristics — not just the exposure to the Career Academy programs — could account for some of the differences in labor market outcomes that were observed between the Academy and non-Academy groups of young women who had children. Unit 4 of the Technical Resources for this report (Kemple and Scott-Clayton, 2004) provides more detail about the labor market experiences of young women with and without children.

[14]Unit 5 of the Technical Resources for this report (Kemple and Scott-Clayton, 2004) provides detailed impact findings for the risk subgroups in the study sample.

goals, Academies attract students who have a wider range of needs and interests than in the past. Little is known about the relative effectiveness of Academies for key subgroups. For instance, some students who apply for Academies at the end of the 8th or 9th grade are already highly engaged in school. Key goals of Academies are to prepare such students for college and to provide them with career-related learning experiences and credentials that will make them more competitive in the labor market. At the other extreme, some Academy applicants were already on a path toward dropping out or having their education end with high school. Academies need to help "reengage" such students, providing them with more applied learning experiences and encouraging them to develop higher aspirations for both education and employment. More needs to be learned about the suitability of the Academy approach for meeting the needs of students in different risk subgroups.

Following are brief definitions of the three *risk subgroups* that are the focus of findings in prior reports and are examined here as well. Each of the characteristics used to define these subgroups was measured at the time that students applied for a Career Academy, that is, before they were randomly selected to be in the Academy or the non-Academy group.[15]

1. **High-risk subgroup:** Students in the study sample (approximately 25 percent of both the Academy and the non-Academy group) who had the combination of characteristics, measured prior to random assignment, that are associated with the highest likelihood of dropping out

2. **Medium-risk subgroup:** Students in the study sample (approximately 50 percent of both the Academy and the non-Academy group) who had characteristics, measured prior to random assignment, indicating that they were not particularly likely to drop out but were not highly engaged in school

3. **Low-risk subgroup:** Students in the study sample (approximately 25 percent of both the Academy and the non-Academy group) who had the combination of characteristics, measured prior to random assignment, that are associated with the lowest likelihood of dropping out

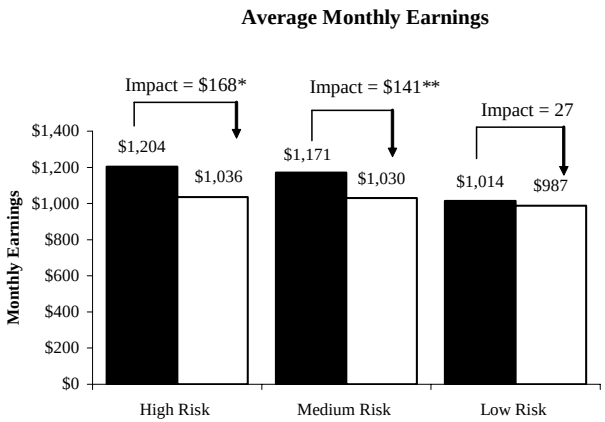
The left side of Exhibit 5 shows the impacts that Career Academies had on average monthly earnings for each of the risk subgroups. It indicates that the Career Academies pro-

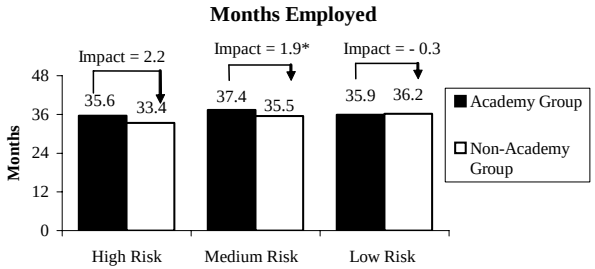
[15]The definition of these subgroups is based on analyses using background characteristics to predict dropping out among students in the non-Academy group. These analyses yielded an index that expresses dropout risk as the weighted average of selected background characteristics, including 8th-grade attendance rates and grades, falling behind on progress toward graduation, being retained in a prior grade, parents' education, and having a sibling who dropped out of high school. For a detailed discussion of the method used to define the risk subgroups, see Kemple and Snipes (2000).

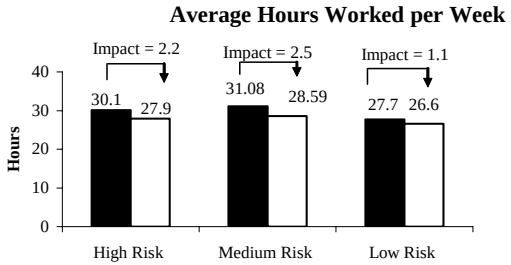
Career Academies Evaluation

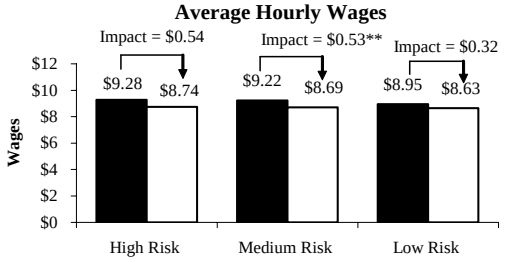
Exhibit 5

Impacts on Average Monthly Earnings and Components of Earnings, by Risk Subgroup









SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey.

NOTES: Measures reflect averages over the 48-month period following scheduled high school graduation for each sample member. A two-tailed t-test was applied to differences between the Academy and non-Academy groups (impacts). Statistical significance levels are indicated as *** = 1 percent; ** = 5 percent; and * = 10 percent.

Monthly earnings were calculated by multiplying each sample member's reported hourly wage times the hours worked per week times the number of weeks worked per month. For months in which sample members did not report being employed, zero values were used for monthly earnings and the components of earnings.

Hourly wages and weekly hours worked reported by sample members at the conclusion of each job were applied to the full duration of the job. Thus, if wages or hours increased or decreased during the job, these measures may over- or underestimate true monthly earnings. Additional analyses indicate that the pattern of impacts was not sensitive to various assumptions about changes in wages or hours.

duced substantial impacts on monthly earnings for the high-risk and medium-risk subgroups but had little impact, overall, for the low-risk subgroup. For the high-risk subgroup, the Academies increased earnings by an average of $168 per month, or 16 percent, compared with the non-Academy group's average monthly earnings of $1,036. Though not shown in Exhibit 5, the impact on monthly earnings was largest in the fourth year of the follow-up period. In that year, the Career Academies produced an increase in earnings of $244 per month. Over the 48-month follow-up period, the high-risk Academy group accumulated just over $8,000 in additional earnings, compared with the non-Academy group.

Exhibit 5 also shows that the earnings impact for the medium-risk subgroup averaged $141 per month (14 percent more than the non-Academy group's average monthly earnings). For this subgroup, the Career Academies also produced positive and statistically significant impacts on months employed and hourly wages.

When averaged over the entire follow-up period, the impacts on labor market outcomes for the low-risk subgroup are marginal and are not statistically significant. Though not shown in Exhibit 5, modest but positive impacts began to emerge in the fourth year of the follow-up period. In that year, members of the Academy group earned an average of just over $100 per month more than their non-Academy group counterparts (not statistically significant). The lack of impacts on labor market outcomes for the low-risk subgroup may be due, in part, to the fact that this group made a substantial investment in post-secondary education during the follow-up period. For example, the Academy and non-Academy groups spent just over 30 months enrolled in post-secondary education programs, and over 40 percent were still working on a post-secondary education credential at the end of the follow-up period.

Impacts on Educational Attainment

Like the preceding section, this one begins by summarizing the Career Academy impacts on educational outcomes for the full study sample. The key outcomes include high school completion status and post-secondary education enrollments and completions. High school completion statuses include on-time graduation, late graduation, and GED receipt. Post-secondary programs include bachelor's degree programs, associate's degree programs, and training certificate or licensing programs. To help place the educational attainment levels of the young people in the study sample in context, this section of the report offers a comparison with a representative sample of similar students from urban school districts across the country. The section then proceeds to a discussion of educational impacts for the subgroups of young men and young women. It concludes with a brief review of the impacts on educational attainment for subgroups defined by the background characteristics associated with the risk of dropping out of high school.

- **Overall, the Career Academies had no impact (positive or negative) on high school completion rates, although the rates are higher than national averages.**

The left side of Exhibit 6 shows the high school completion status of students in the Academy and non-Academy groups. It shows first that more than 90 percent of the students in both groups graduated from high school or received a GED. More than 80 percent of both groups received a high school diploma, and nearly 73 percent graduated on time.[16]

To help place these outcome levels in a broader context, the right side of Exhibit 6 shows the high school completion status of a nationally representative group of students who had similar background characteristics and came from school districts that are similar to those represented in the study sample.[17] The figure illustrates several important points about the performance of students in the study sample and about the conclusions one should and should not draw from these outcome levels.

Exhibit 6 shows that students in both the Academy and the non-Academy group were substantially more likely to graduate from high school on time than similar students from similar districts across the country. Most notably, approximately 73 percent of the Academy group graduated from high school on time, compared with only 64 percent of similar students from similar school districts nationally. Though not shown in the exhibit, this difference is even more dramatic when comparing students in the evaluation sample with students in the national sample who reported being enrolled in the general curriculum track of their high school — the option typically taken by students in the study's non-Academy group.

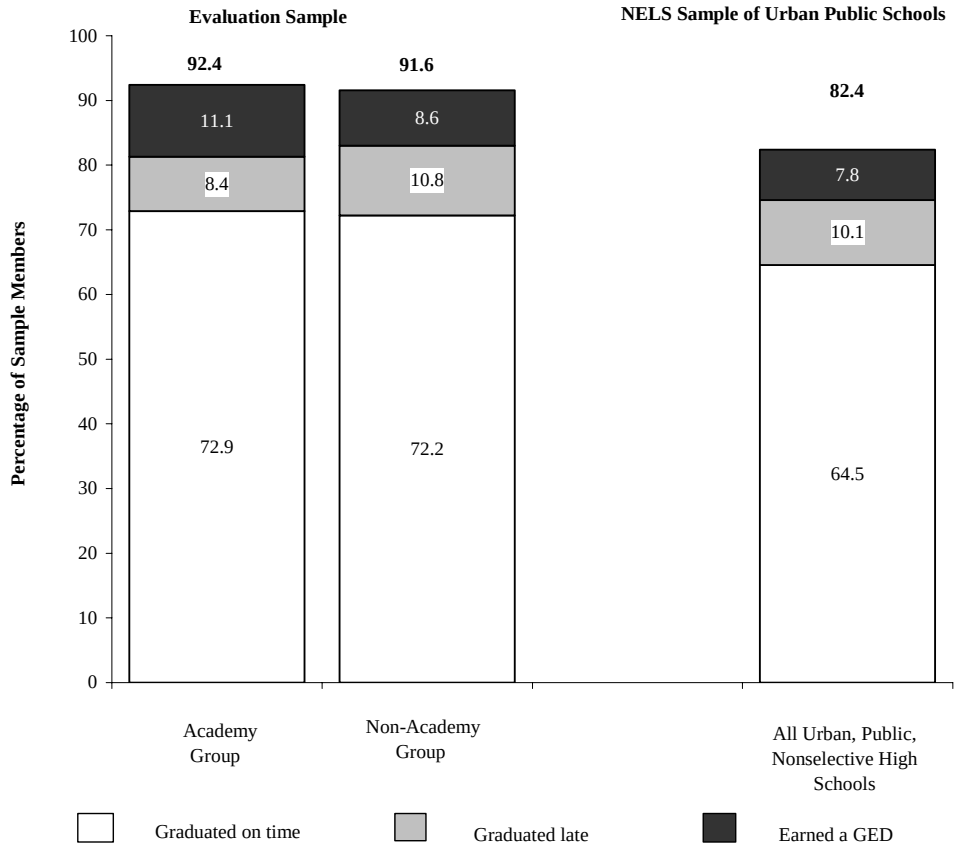
[16] Unit 3 of the Technical Resources for this report (Kemple and Scott-Clayton, 2004) provides detailed findings on the Career Academies' impacts on educational outcomes for the full study sample.

[17] The percentages on the right side of Exhibit 6 are based on a sample of students from the National Education Longitudinal Study (NELS) of 1988 through 2000 (Curtin et al., 2002). NELS administered surveys in 1988, 1990, 1992, 1994, and 2000 to a nationally representative group of students who were 8th-graders in the spring of 1988 and were scheduled to graduate from high school in 1992. Because virtually all the students in the non-Academy group completed the 9th grade, the analyses presented here include only students from the NELS sample who were 10th-graders in 1990 (that is, who did not drop out before the 10th grade). Also, to maintain comparability with the schools in the Career Academies Evaluation, only NELS students from nonselective public comprehensive high schools in urban school districts were included in the comparisons presented here. The percentages are regression-adjusted and mean-centered to reflect outcomes for students who had the same distribution of background characteristics as students in the Career Academies Evaluation sample. For a more detailed description of the analyses that form the basis of these findings, see Unit 2 of the Technical Resources for this report (Kemple and Scott-Clayton, 2004).

Career Academies Evaluation

Exhibit 6

Adjusted High School Completion Rates Four Years After High School for the Evaluation Sample and the NELS Sample



SOURCES: MDRC calculations from the Career Academies Evaluation Post-High School Follow-Up Survey Database and the National Education Longitudinal Study (NELS), 1988-2000, public-use data files.

NOTES: All measures reflect completion status 48 months following scheduled high school graduation.

Students were considered on-time graduates if they received their diploma by the end of June in the year they were scheduled to graduate.

Estimates for all urban, public, nonselective high schools include some students who either did not report a specific high school curriculum or reported a type of curriculum other than the three shown.

The NELS estimates incorporate weights that account for nonresponse and project to the population of students who were enrolled in 10th grade in 1990. In addition, the NELS estimates are adjusted to reflect a sample of students with the same distribution of background characteristics as the non-Academy evaluation sample. No tests of statistical significance were performed.

If the evaluation were only able to compare the performance of students in the Academy group with the performance of similar students from similar high schools across the country, one might be led to the conclusion that Career Academies produce meaningful increases in high school graduation rates. In fact, however, the differences in high school completion rates are due to differences in other characteristics that are associated with the students' initial motivation to apply for a Career Academy program.

In short, Exhibit 6 illustrates that the Career Academies did not have an impact (positive or negative) on high school completion rates. At the same time, the completion rates (particularly on-time graduation rates) for students in both the Academy and the non-Academy group would be considered high relative to national averages for similar students in similar schools. Thus, the Career Academies served as a viable strategy to prevent students from dropping out and to promote high school completion, though they were not better at this than the alternatives available in the high schools and communities where they are located.

- **Overall, the Career Academies had no impact (positive or negative) on post-secondary education enrollment and attainment rates.**

Exhibit 7 shows the percentage of Academy and non-Academy group members who had either completed a post-secondary education credential or were still working toward a credential at the end of the 48-month follow-up period. It shows that, by the end of the follow-up period, about 56 percent of both groups had either completed a credential or were still working toward one. Though not shown in the exhibit, nearly 80 percent of both groups enrolled in some type of post-secondary education program during the 48-month follow-up period. This represents approximately 87 percent of those who graduated from high school or received a GED. Sample members from both groups spent an average of just over 21 months of the 48-month follow-up period enrolled in a post-secondary education program.

The post-secondary education enrollment rates for the study sample are quite high compared with national averages, which indicate that approximately 76 percent of those who complete high school or receive a GED enroll in some type of post-secondary education.[18]

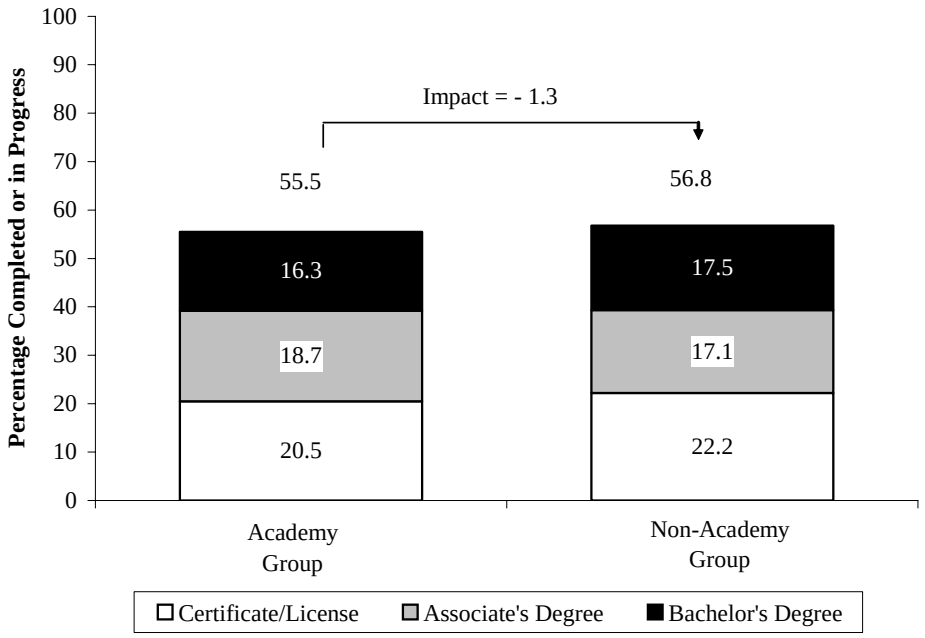
As with high school completion status, the Career Academies had little or no impact on post-secondary educational attainment. Exhibit 7 shows the percentages of students who had completed or were still working on a post-secondary credential at the end of the follow-up

[18]See, for example, Ingels et al., 2002. A direct comparison of post-secondary education enrollment and completion rates with the Career Academies Evaluation sample using data from the NELS survey of 1988 was not possible because of differences in follow-up periods (eight years for NELS and only four years for the Career Academies sample) and differences in the definitions of the educational attainment measures that were used.

Career Academies Evaluation

Exhibit 7

Impacts on Highest Post-Secondary Credential Completed or in Progress for the Full Study Sample



SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey.

NOTES: Unless otherwise indicated, statuses reflect a 48-month period ending in June of 2000, 2001, or 2002, the fourth year following scheduled high school graduation for each sample member.

Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years.

Rounding may cause slight discrepancies in calculating sums and differences.

A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Students must have earned a high school diploma or GED to be considered enrolled in a post-secondary education program.

A credential was considered "in progress" if the student reported attempting it in a program that he or she was currently attending (within three months of the end of the follow-up period) and expected to complete.

period.[19] It shows that 16 percent of the Academy group and just over 17 percent of the non-Academy group had received a bachelor's degree or were still working toward one. Though not shown in the exhibit, the vast majority of these sample members (about 14 percent of both the Academy and the non-Academy group) were still working toward a bachelor's degree at the end of the follow-up period.[20] Exhibit 7 also shows that approximately 19 percent of the Academy group and 17 percent of the non-Academy group had either completed or were still working toward an associate's degree. In this case, 13 percent of the Academy group and 12 percent of the non-Academy group were still working toward an associate's degree (not shown in the exhibit). In all, only about 8 percent of the young people in both the Academy and the non-Academy group had completed a two-year or four-year degree, and 27 percent were still working on these credentials at the end of the follow-up period.

Not surprising, the largest proportion of degrees completed or in progress occurred in certificates and licenses, which typically are earned through a one-year training program. About 21 percent of the Academy group and 22 percent of the non-Academy group had either completed or were still working toward a certificate or license. The vast majority of sample members in this status (18 percent of the Academy group and 20 percent of the non-Academy group) already completed their credential by the end of the follow-up period.

The survey that was administered to the study sample for this report also asked for detailed information about the education programs in which sample members were enrolled near or at the end of the follow-up period.[21] Supplementary analyses of these data provide some further insights into enrollment patterns and the characteristics of the programs. It should be noted that, as with other educational outcomes, there was little or no difference between Academy and

[19]Sample members were considered to be making progress on a credential if they were enrolled in a post-secondary program within three months of the end of the follow-up period and if they reported that they were still working toward their degree and expected to complete it.

[20]Note that percentages in Exhibit 7 pertain to the highest level of post-secondary education completed or in progress at the end of the follow-up period. A small percentage of sample members who are listed as completing or still working toward a bachelor's degree may also have completed an associate's degree. Similarly, some students who are listed as completing or still working toward an associate's degree also completed a training certificate or licensing program.

[21]Unit 4 of the Technical Resources for this report (Kemple and Scott-Clayton, 2004) provides a list of these characteristics for both groups. The information on education program characteristics discussed in this section of the report and presented in the Technical Resources is based only on the sample members who enrolled in post-secondary education programs during the follow-up period and focuses only on the characteristics of the last program they attended. As a result, differences between Academy and non-Academy groups do not represent valid indicators of Career Academy impacts (or lack of impacts).

non-Academy group members in the characteristics of the education programs they last attended during the follow-up period.[22]

Analysis of the supplementary survey data indicates that sample members in both groups were enrolled in their most recent education program for an average of 20 months. The average sample member had either completed or left that program about 12 months before the end of the follow-up period. Further analysis also indicates that about 30 percent of the students who were enrolled in post-secondary education programs left those programs before they completed their degrees. Nearly half of those who left indicated that they did so for financial reasons or to spend more time at work.

Sample members attended class an average of nearly 20 hours per week, and more than two-thirds of the sample were enrolled in their most recent post-secondary education program full time. More than one-third of the sample took a basic or remedial math or reading course as part of the education program in which they were enrolled. The two largest sources of financial support were scholarships/grants and employment. Approximately 42 percent of those who were enrolled in post-secondary education programs received grants or scholarships to help pay tuition and expenses. Over 40 percent of the sample worked while attending school, to help pay tuition and expenses. The balance of expenses was covered by combinations of loans, work-study programs, personal savings, and family contributions.

- **The Career Academies did not have systematic impacts on educational attainment for either young men or young women. Thus, the substantial impacts on labor market outcomes for young men did not come at the expense of reducing the prospects for post-secondary education.**

Exhibit 8 shows the Career Academy impacts on high school completion status and on post-secondary education credentials earned or still in progress at the end of the follow-up period for the young men and young women in the study sample.[23] The top half of the exhibit indicates that there were only small differences in the high school completion rates of both the young men and the young women in the Academy and the non-Academy groups.[24] For both genders, the Academy group was slightly less likely (not statistically significant) to graduate

[22] Unit 3 of the Technical Resources for this report (Kemple and Scott-Clayton, 2004) includes information about the most recent post-secondary education program attended by the Academy and non-Academy groups (see Exhibit 3.7).

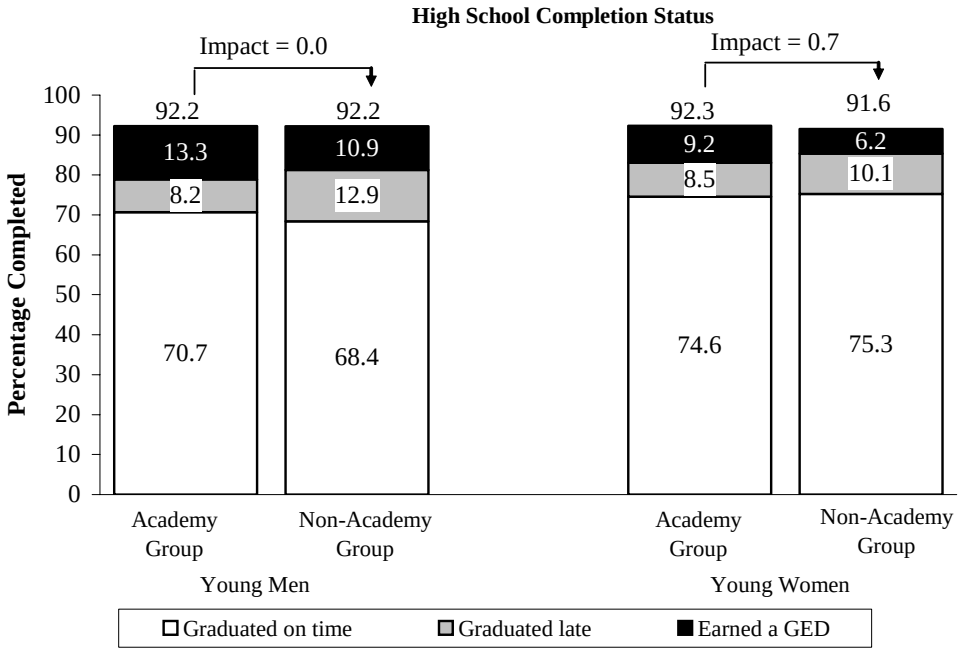
[23] Unit 4 of the Technical Resources for this report (Kemple and Scott-Clayton, 2004) includes supplementary tables that provide detailed findings on the Career Academies' impacts on educational outcomes for young men and young women.

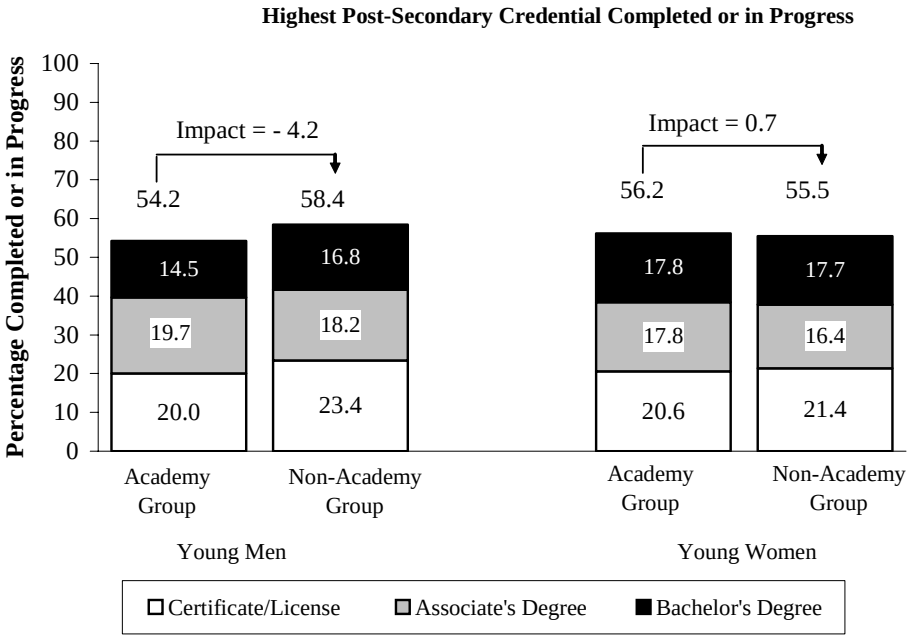
[24] None of the differences that are displayed in Exhibit 8 are statistically significant.

Career Academies Evaluation

Exhibit 8

Impacts on Educational Attainment, by Gender





(continued)

Exhibit 8 (continued)

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey.

NOTES: Unless otherwise indicated, statuses reflect a 48-month period ending in June of 2000, 2001, or 2002, the fourth year following scheduled high school graduation for each sample member.

Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years.

Rounding may cause slight discrepancies in calculating sums and differences.

A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Students must have earned a high school diploma or GED to be considered enrolled in a post-secondary education program.

A credential was considered "in progress" if the student reported attempting it in a program that he or she was currently attending (within three months of the end of the follow-up period) and expected to complete.

from high school than the non-Academy group and was slightly more likely to earn a GED. Young men were slightly less likely to graduate from high school than young women, and they were somewhat more likely to earn a GED instead.

The bottom half of Exhibit 8 indicates that young men in the Academy group were somewhat less likely than young men in the non-Academy group to have earned a post-secondary credential or to have been working toward one at the end of the follow-up period. Although the modest differences shown in Exhibit 8 are not statistically significant, they stem from somewhat larger differences in initial rates of enrollment in post-secondary education programs (not shown in the exhibit). A further examination of these findings is necessary to explore the interaction between labor market outcomes and the pursuit of further education for young men. The discussion that follows suggests, in fact, that the substantial labor market impacts for young men discussed earlier did not come at the expense post-secondary education opportunities. In addition, it does not appear that the slightly lower rates at which the young men in the Academy group completed or continued post-secondary education programs affected their much stronger position in the labor market throughout the follow-up period.

Further analyses (not shown in Exhibit 8) indicate that 75 percent of the young men in the Academy group enrolled in some type of post-secondary education program during the follow-up period, compared with 82 percent of those in the non-Academy group (a statistically

significant difference).[25] Furthermore, the lower initial post-secondary enrollment rates among the Academy group were offset somewhat by higher attrition rates among those in the non-Academy group. In other words, although the young men in the non-Academy group were somewhat more likely to enroll in a post-secondary education program, they were also more likely than young men in the Academy group to leave their post-secondary programs before completion. Also, differences in post-secondary enrollments and completions for young men were concentrated in short-term skills training or trade school programs. About half the difference in initial enrollment rates and about half the difference in completion rates was among those who enrolled in one-year training programs. In all, young men in the Academy group attended post-secondary education programs for an average of 20 months during the follow-up period, compared with 21 months for young men in the non-Academy group. This one-month difference is not statistically significant. Finally, at the end of the follow-up period — when the labor market benefits from the short-term training programs might begin to emerge — young men in the Academy group had substantially higher earnings and employment rates than those in the non-Academy group.

Finally, Exhibit 8 indicates that the Career Academies had little or no impact (positive or negative) on educational attainment for young women. Young women in the non-Academy group graduated from high school and went on to a range of post-secondary programs at the same high rates as young women in the Academy group.

- **The analysis suggests that the Career Academies may have produced a modest reduction in post-secondary education enrollment rates for the high-risk subgroup. The Academies had no systematic impact (positive or negative) on educational attainment for the medium- and low-risk subgroups.**

Exhibit 9 displays the high school and post-secondary completion statuses of the three risk subgroups discussed earlier.[26] First, the top half of the exhibit shows that, as expected, the Academy and non-Academy groups in each risk subgroup attained dramatically different rates of high school completion, particularly in their rates of on-time graduation. For example, while only 53 percent of the high-risk Academy group graduated from high school on time, 74 percent of the medium-risk subgroup and 89 percent of the low-risk subgroup did so. Recall that these risk subgroups are defined on the basis of background characteristics that are associated with the risk of dropping out of high school. Despite these differences in outcome levels, however,

[25] See Unit 4 of the Technical Resources for this report (Kemple and Scott-Clayton, 2004).

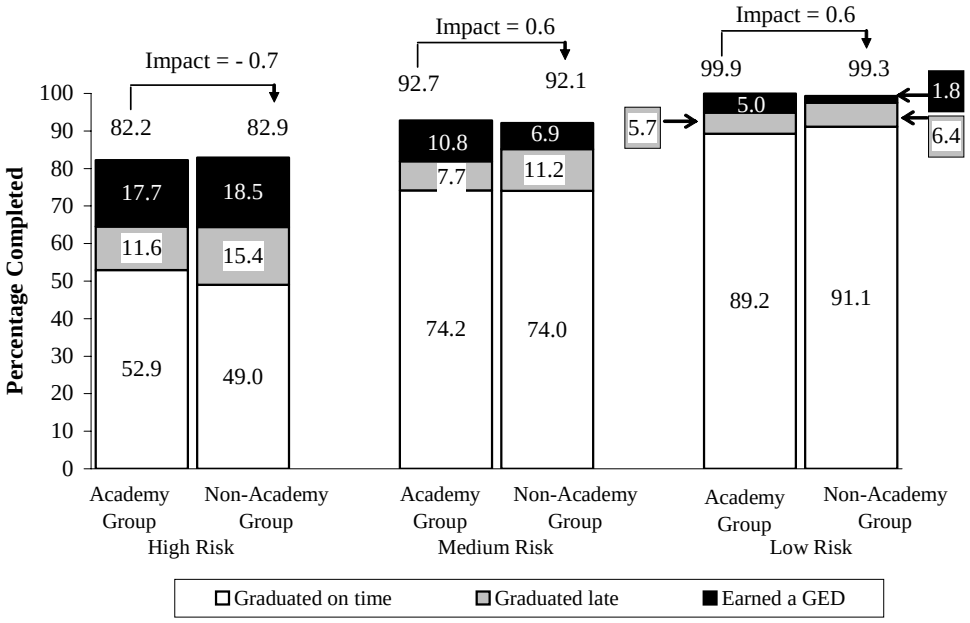
[26] Unit 5 of the Technical Resources for this report (Kemple and Scott-Clayton, 2004) includes supplementary tables that provide detailed findings on the Career Academies' impacts on educational outcomes for the risk subgroups.

Career Academies Evaluation

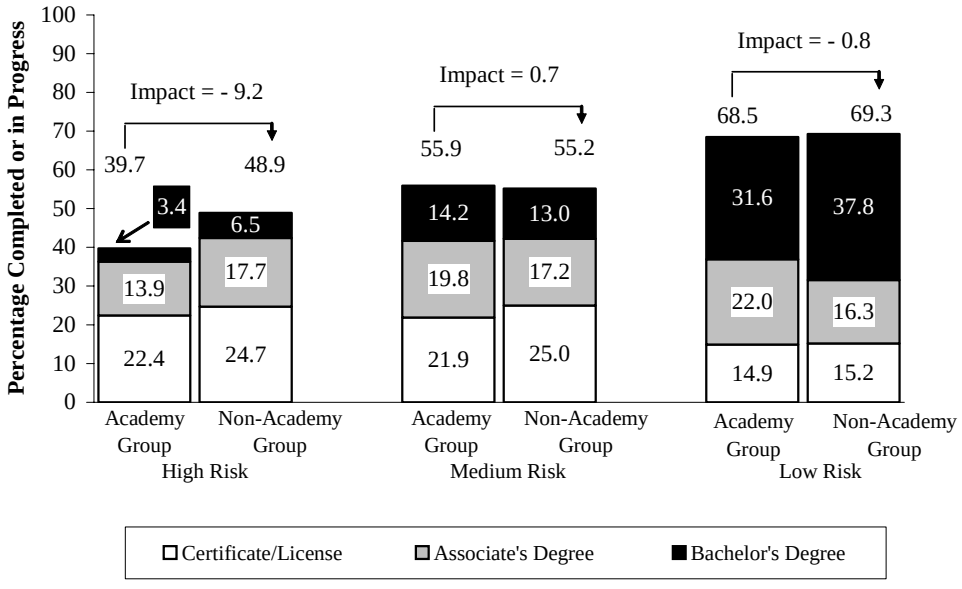
Exhibit 9

Impacts on Educational Attainment, by Risk Subgroup

High School Completion Status



Highest Post-Secondary Credential Completed or in Progress



(continued)

Exhibit 9 (continued)

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey.

NOTES: Unless otherwise indicated, statuses reflect a 48-month period ending in June of 2000, 2001, or 2002, the fourth year following scheduled high school graduation for each sample member.

Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years.

Rounding may cause slight discrepancies in calculating sums and differences.

A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Students must have earned a high school diploma or GED to be considered enrolled in a post-secondary education program.

A credential was considered "in progress" if the student reported attempting it in a program that he or she was currently attending (within three months of the end of the follow-up period) and expected to complete.

the top half of Exhibit 9 indicates that the Career Academies had almost no impact on high school completion status for any of the three risk subgroups.[27]

The bottom half of Exhibit 9 suggests a more mixed set of findings regarding progress toward post-secondary education credentials. The first set of bars in the exhibit indicates that, among those in the high-risk subgroup, the Career Academies reduced the percentage of Academy group members who had completed a post-secondary credential or were still working toward a credential at the end of the follow-up period. Although this impact is not statistically significant, it follows from the finding (not shown in the exhibit) that the high-risk Academy group was less likely than the non-Academy group to enroll in a post-secondary education program to begin with; 60 percent of the high-risk Academy group enrolled in some type of post-secondary education during the follow-up period, compared with nearly 72 percent of the high-risk non-Academy group. The reduction in initial enrollments was confined to two-year colleges and associate's degree programs. Among high-risk sample members who did enroll in associate's degree programs, however, those in the Academy group were more likely to complete or persist in those programs than were those in the non-Academy group who also enrolled. Overall, however, high-risk Academy group members were enrolled in post-secondary education programs for an average of about 11 months during the follow-up period, compared with nearly 15 months for those in the non-Academy group (a statistically significant difference).

[27]None of the differences that are displayed in Exhibit 9 are statistically significant.

As noted earlier, however, the lower rates of post-secondary education enrollment among the high-risk Academy group members did not compromise their much stronger position in the labor market. Even in the last year of the follow-up period, high-risk Academy group members continued to earn more than their non-Academy group counterparts.

The second set of bars in the bottom part of Exhibit 9 indicates that over half of those in the medium-risk subgroup had either completed a post-secondary credential or were still working toward a credential at the end of the follow-up period. Although none of the differences between the Academy and non-Academy groups are statistically significant, the exhibit suggests that the slight reduction in completion or progress toward training certificates and licenses was offset by a slight increase in completion or progress toward an associate's degree. This pattern is consistent with trends in initial post-secondary enrollments, which are statistically significant. This suggests that the Career Academies may have had a slight impact on moving medium-risk students into an associate's degree program rather than into short-term skills training programs.

Finally, the third set of bars in Exhibit 9 indicates that more than two-thirds of those in the low-risk subgroup had either completed a post-secondary credential or were still working toward a credential at the end of the follow-up period. As with the other risk subgroups, none of the differences between the Academy and non-Academy groups are statistically significant. In the case of the low-risk subgroup, however, a slight decrease in completion or progress toward training certificates and licenses was offset by a slight increase in completion or progress toward bachelor's degrees. This suggests that the Career Academies may have had a slight impact on moving low-risk students into an associate's degree program rather than a bachelor's degree program.

The foregoing analyses do not indicate any clear or systematic patterns of Career Academy impacts on post-secondary education enrollments or attainment. Few of the differences between the Academy and non-Academy groups are statistically significant. Even the few initial enrollment rates that were lower among Academy group members were mitigated by somewhat higher attrition rates among the non-Academy group. Further analysis and, ideally, additional follow-up data may provide a clearer picture of how Career Academies influence longer-term educational attainment and the balance between labor market participation and additional investments in education.

Impacts on Social Adjustment

This final set of findings addressed in this report focuses on several indicators of social adjustment. For the purposes of this report, social adjustment measures include marital status, parenting, living arrangements, public assistance receipt, access to health insurance, voter registration, and involvement with the criminal justice system. Career Academies may be able to improve these types of outcomes because of their focus on forging strong interpersonal supports

for students during high school and their investment in facilitating healthy transitions to productive opportunities after high school. At the same time, the years immediately following high school are typically unsettled as young people focus on balancing school and work, establish new adult relationships outside their families, and begin to look ahead to longer-term personal and career goals. As a result, it might be too early to discern any patterns of social adjustment among the study sample or any indications that the Career Academies could have had impacts on these outcomes. Even so, this section of the report briefly discusses findings on measures of social adjustment in order to provide further insights into the circumstances and behavior of the young people in the study.

- **With the exception of an increase in health insurance coverage, the Career Academies did not produce any clear patterns of impacts (positive or negative) on social adjustment measures, either for the full sample or for the various subgroups.**

Exhibit 10 lists several indicators of social adjustment reported by sample members on the follow-up survey.[28] The exhibit indicates that the Career Academies reduced slightly the percentage of Academy group members who were without health insurance coverage during the last year of the follow-up period. Further analysis indicates that this impact was associated with the increase in employment among those in the Academy group.

The first row of the table shows that nearly 37 percent of the Academy group had children. Though not shown in the table, this includes 44 percent of the young women and 27 percent of the young men.[29] As noted earlier, childbearing among the young women appears to have had a powerful influence on the degree to which they engaged in post-secondary education (either exclusively or in combination with work) or focused on working as their primary activity beyond parenting.

The exhibit also shows that about 20 percent of the Academy group reported that they were married (this includes 23 percent of the young women and 16 percent of the young men). In addition, 48 percent of the Academy group reported that they were living with their parents. Young men in the Academy group were somewhat less likely to be living with their parents (51 percent) than were young men in the non-Academy group (58 percent).

[28]Supplementary tables that provide detailed findings on the Career Academies' impacts on social adjustment indicators for the gender subgroups and the risk subgroups can be found in Units 4 and 5, respectively, of the Technical Resources for this report (Kemple and Scott-Clayton, 2004).

[29]Given the overall similarity in outcome levels for these measures among both the Academy and the non-Academy group, most of the discussion in this section focuses on the Academy group.

Career Academies Evaluation

Exhibit 10

Impacts on Social Adjustment Indicators for the Full Study Sample

Outcome (%)	Academy Group	Non-Academy Group	Impact
Is a parent	36.8	35.2	1.7
Is a custodial single parent	19.0	17.3	1.8
Marital status			
Married	19.8	19.3	0.5
Single	77.0	78.3	-1.3
Divorced, separated, or widowed	3.2	2.3	0.8
Lives with parent(s) or guardian(s)	48.2	52.3	-4.1
Has ever gone without health insurance in past year	27.1	31.3	-4.2 *
Has received TANF or cash assistance in past year	7.2	5.9	1.3
Has received food stamps in the past year	9.8	8.0	1.8
Is registered to vote	66.3	64.7	1.6
Was involved in recent illegal or drug-related activity[a]	6.7	6.2	0.6
Sample size (N=1,458)	799	659	

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Unless otherwise indicated, statuses were reported for the end of a 48-month period ending in June 2000, 2002, or 2002, the fourth year following scheduled high school graduation.

Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years.

Rounding may cause slight discrepancies in calculating differences.

A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

[a]This measure includes illegal drug use in the past two weeks, breaking the law (other than traffic violations) in the past two weeks, current gang membership, and any arrests or convictions in the past year.

Exhibit 10 further indicates that both groups were very unlikely to have received public assistance or to be involved with the criminal justice system. These findings are consistent with the very high rates of engagement in either education or employment throughout the follow-up period. In fact, though not shown in the exhibit, those in the Academy group were either attending school or working during 42 of the 48 months in the follow-up period. The high rates of engagement in productive activities and the low rates of risk-taking behaviors suggest that the sample members, on average, were making quite successful transitions to adulthood.

Implications of the Findings

The findings discussed above suggest several potentially important implications for education policy and practice.

- **The findings provide convincing evidence that increased investments in career-related experiences during high school can improve students' post-secondary labor market prospects.**

A growing body of descriptive analysis suggests that increases in vocational course-taking and engagement in higher-quality work-based learning programs during high school are associated with better labor market outcomes after high school.[30] Much of this research focuses only on the correlation between high school course-taking patterns or work experiences and later labor market experiences. Given limitations to control for self-selection and program selection of students into these high school experiences, it is difficult to make valid causal inferences about the relationships.

The findings discussed in this report provide some of the most convincing evidence yet that a high school-based intervention can produce substantial and sustained improvements in post-secondary labor market prospects. In fact, the magnitude of the impacts on monthly earnings for young men exceed differences in earnings that have been found in other research comparing young workers who have one or two years of post-secondary education with those who have only a high school diploma.[31] While one should not conclude from this that Career Academies can substitute for post-secondary education below the associate's-degree level, the findings seem to suggest that Academies do produce benefits in the labor market that are commensurate with those associated with continuing investment in post-secondary programs.

[30]See Stern et al., 1992; Curtin et al., 2002; Urquiola et al., 1997; Stern et al., 1994; Stern, McMillion, Hopkins, and Stone, 1990.

[31]See Pond, Sum, Mykhaylo, and Meredith, 2002.

While this report provides strong evidence that the Career Academies produced real improvements in labor market prospects (particularly for young men), forthcoming analyses will examine *how* the programs produced these effects and *which features* were likely to have contributed most to the impacts.[32] Preliminary findings shed some light on these issues. The analyses focus on the various cohorts of students who entered the study in each of the sites during the three years of sample intake. Because random assignment was done independently for each of these cohorts, each represents a small random assignment experiment. The additional analyses involved a preliminary comparison of impacts across these cohorts. This comparison provides suggestive evidence that substantial increases in students' exposure to career awareness and development activities were associated with more substantial labor market impacts. Such career awareness and development activities included job shadowing, work-based learning activities, career fairs, guest speakers, and career-related guidance. In other words, cohorts of students in the study sample who experienced substantial increases in exposure to these types of activities were also more likely to have experienced strong, positive labor market impacts. It is important to note, however, that this association occurred only when the programs also enabled students to complete a basic academic core curriculum. Some cohorts experienced substantial increases in vocational and career-related course-taking that were accompanied by a reduction in academic course-taking. These cohorts were more likely to exhibit small or negligible impacts on labor market outcomes.

- **The Career Academies in this study demonstrate the feasibility of accomplishing the goals of school-to-career and career-technical education without compromising academic goals.**

Like many approaches to education reform, the Career Academy model has many and varied goals. Career Academies aspire to prevent students from dropping out of high school and to prepare them for college and other post-secondary education opportunities. At the same time, Career Academies provide students with an explicit introduction to the world of work and try to furnish them with skills and connections to help them navigate the transition from high school to successful employment. Many critics of school-to-work transition initiatives and career-technical programs contend that programs like Career Academies track students into classes and work experiences that orient them toward immediate entry into the labor market. Such criticism

[32]To explore these and other issues, MDRC will conduct further analyses using the data that have been collected for the Career Academies Evaluation. These analyses, involving both experimental and quasi-experimental methods, will include a synthesis of findings across the full eight years of follow-up for the study and a deeper examination of the sources of the impacts that the programs produced (or explorations of why the programs did not produce impacts — for example, on educational attainment).

sometimes suggests that this orientation comes at the expense of preparation for and opportunities to attend college.

In this study, however, the high rates of enrollment in post-secondary education programs and the sustained impacts on employment and earnings suggest that such tradeoffs need not occur. Even in the case of the high-risk subgroup, where there was a moderate (not statistically significant) reduction in post-secondary education enrollments, this does not appear to have diminished the substantial impacts on labor market outcomes through the end of the follow-up period.

At the same time, the findings indicate that although the Academies provided a viable pathway to post-secondary education, they did not create better opportunities than those offered in the regular high school environment. This is consistent with previous findings from the evaluation, which indicate that Career Academies offered essentially the same set of academic courses and course requirements as those offered in the rest of the high school. In addition, Career Academy students were typically assigned to the regular high school guidance counselors and college placement services if they were interested in going on to post-secondary education. Through their partnerships with local employers, the Career Academies did tend to offer students opportunities to learn about the education and skill requirements of various occupations in their career field. It is hypothesized that these experiences could improve students' aspirations and access to higher education.

- **The findings suggest that Career Academies should make special efforts to serve students who are at risk of dropping out of high school.**

One theme that has evolved from the Career Academies Evaluation is that students who enter the programs at high or medium risk of dropping out of high school tend to benefit most from exposure to the programs. Earlier findings indicate that high-risk students experienced modest reductions in dropout rates and increases in attendance and course-taking (although these did not translate into impacts on graduation or post-secondary enrollment rates). The present findings indicate that the Academies' strong labor market impacts were concentrated among the high- and medium-risk subgroups. Even for the high-risk subgroup, impacts on labor market outcomes grew over time, despite the modest reductions in post-secondary education enrollments.

These findings suggest that Career Academies should sustain their commitment to serving a diverse group of students but that they should also make greater efforts to attract and retain high- or medium-risk students. At the same time, however, targeting such students exclusively might lower expectations for the program among teachers, students, and parents. More important, the implementation research for this evaluation indicates that the Academies draw much of their power to improve interpersonal supports and increase student engagement from the diversity of their student bodies.

Several school districts and school reform initiatives around the country are now attempting to convert entire high schools into clusters of Career Academies. Instead of giving students the option of enrolling in traditional general or vocational programs, these wall-to-wall Academies offer students a choice among different Academies that combine academic and career-related curricula. This approach may have the greatest potential for maximizing high-risk students' access to the programs (because all students would be required to enroll in an Academy) while ensuring that the Academies include a broad mix of students. These high schools and reform initiatives, however, face the related challenges of preventing high-risk students from being tracked into poorly implemented Academies and of ensuring a high level of implementation on a larger scale.

- **The Career Academies Evaluation demonstrates the feasibility, benefits, and challenges of conducting a longitudinal random assignment evaluation of a prominent high school reform approach.**

The Career Academies Evaluation is one of the few longitudinal random assignment evaluations of a school-based education intervention. Without the random assignment research design and the extended follow-up period, it is likely that an alternative approach to the study would have yielded misleading findings and conclusions. For example, the statistical comparisons with national data might suggest that the Career Academies represent a substantially better educational opportunity than many alternatives available to similar students from similar schools and school districts across the country. The availability of a valid control group — determined by the random assignment design of the evaluation — shows that the Career Academies in this study tended to attract students (by a combination of self-selection and program selection) who were likely to do well in high school and post-secondary education even if they had not been exposed to the Career Academies.

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Earlier MDRC Publications on Career Academies

The Career Academy approach to high school reform calls for restructuring large schools into smaller learning communities, improving instruction, and preparing students for transitions to further education or work. Career Academies have been implemented in an estimated 2,500 high schools across the United States. Begun in 1993, MDRC's evaluation of Career Academies — the first to use a random assignment research design — aims to produce reliable evidence about the approach's effects on students' performance and their move from high school into the workforce and post-secondary education.

Career Academies
Impacts on Students' Initial Transitions to Post-Secondary Education and Employment
2001. James Kemple

Career Academies
Impacts on Students' Engagement and Performance in High School
2000. James Kemple, Jason Snipes

Career Academies
Building Career Awareness and Work-Based Learning Activities Through Employer Partnerships
1999. James Kemple, Susan Poglinco, Jason Snipes

Career Academies
Communities of Support for Students and Teachers— Emerging Findings from a 10-Site Evaluation
1997. James Kemple

Career Academies
Early Implementation Lessons from a 10-Site Evaluation
1996. James Kemple, JoAnn Leah Rock

NOTE: A complete list of MDRC publications is available from MDRC and on its Web site: www.mdrc.org.

About MDRC

MDRC is a nonprofit, nonpartisan social policy research organization. We are dedicated to learning what works to improve the well-being of low-income people. Through our research and the active communication of our findings, we seek to enhance the effectiveness of social policies and programs. MDRC was founded in 1974 and is located in New York City and Oakland, California.

MDRC's current projects focus on welfare and economic security, education, and employment and community initiatives. Complementing our evaluations of a wide range of welfare reforms are new studies of supports for the working poor and emerging analyses of how programs affect children's development and their families' well-being. In the field of education, we are testing reforms aimed at improving the performance of public schools, especially in urban areas. Finally, our community projects are using innovative approaches to increase employment in low-income neighborhoods.

Our projects are a mix of demonstrations — field tests of promising program models — and evaluations of government and community initiatives, and we employ a wide range of methods to determine a program's effects, including large-scale studies, surveys, case studies, and ethnographies of individuals and families. We share the findings and lessons from our work — including best practices for program operators — with a broad audience within the policy and practitioner community, as well as the general public and the media.

Over the past quarter century, MDRC has worked in almost every state, all of the nation's largest cities, and Canada. We conduct our projects in partnership with state and local governments, the federal government, public school systems, community organizations, and numerous private philanthropies.

Career Academies

Impacts on Labor Market Outcomes and Educational Attainment

March 2004

Technical Resources

Contents

Unit 1

Sample Description and Survey Response Rate

Post-High School Survey Data and Analysis Issues

The Career Academies Four-Year Post-High School Follow-Up Survey, which was administered to students in the study sample approximately 48 months after their scheduled graduation from high school, constitutes the primary data source for this report. The survey sample of 1,458 students represents 83 percent of the full study sample — 83 percent of the Academy group and 82 percent of the non-Academy group. The overall response rate and the similarity between the response rates for the Academy and non-Academy groups are very high by the standards of survey research.

Whenever survey response rates are less than 100 percent, however, it is important to investigate two factors that may confound interpretation of the findings. The first part of this unit focuses on whether the respondent sample systematically differs from the nonrespondent sample. It concludes that there were a number of differences between respondents and nonrespondents. Most notably, young men and high-risk students were somewhat underrepresented in the respondent sample, while young women and low-risk students were slightly overrepresented. As a result, caution should be exercised in generalizing the impact findings from the respondent sample to the full report sample.

A second and more serious concern is whether respondents in the Academy group differ systematically from respondents in the non-Academy group. The second part of this unit concludes that there were no systematic differences in background characteristics between the Academy and non-Academy group members who responded to the survey, affording a high degree of confidence that differences in outcomes between the two groups reflect impacts of the Career Academies rather than preexisting differences in background characteristics between Academy and non-Academy sample members who responded to the survey.

Post-High School Survey Response Rates

The evaluation team attempted to obtain information about high school graduation and initial post-high school education and employment experiences for the full sample of 1,764 students in all nine sites participating in the Career Academies Evaluation.[1] For the present pur-

[1]Details about site selection can be found in the following previous report from the evaluation: James J. Kemple and JoAnn Leah Rock, *Career Academies: Early Implementation Lessons from a 10-Site Evaluation* (New York: MDRC, 1996). Also, as discussed in that report, the initial research sample consisted of 1,953 students in 10 sites. A total of 189 of these students were dropped from the initial research sample, and efforts to collect data for them were discontinued. Students who were dropped from the sample include the following: 126 students in the initial sample who attended an Academy that was disbanded after two years in the study and was unable to provide sufficient follow-up data for its students and 59 students in the initial sample who applied for an Academy program during their 10th-grade year and should not have been included in

(continued)

pose, this group of students — all of whom applied for a place in an Academy — is referred to as the *study sample.* Of the students in the study sample, 959 (54 percent) were randomly selected to enroll in an Academy (the *Academy group*). The remaining 805 students (46 percent of the study sample) were not invited to participate in the Academies but could choose other options available in their high school or school district (the *non-Academy group*).

Each student entered the study at the end of the 1992-1993, 1993-1994, or 1994-1995 school year, at which point he or she was at the end of the 8th- or 9th-grade year. Whether students were in the 8th grade or 9th grade at the point of application depended on the Academy program to which they applied; two of the Academies began in the 9th grade, and the remaining seven began in the 10th grade. Students applied for admission to the programs at the end of the school year before expected enrollment. This report follows sample members through the 48 months after their scheduled graduation date — that is, through June 2000, 2001, or 2002, depending on the year during which, and the grade level at which, sample members entered the study.

A key question for interpreting the findings presented in this report is whether students for whom survey data are available are representative of the full study sample. Exhibit 1.1 lists the percentages of students in the full study sample, and in key subgroups of interest, who responded to the Four-Year Post-High School Follow-Up Survey. The first column in the table shows the overall response rates for the full sample and various subgroups, and the second and third columns show the rates for the Academy and non-Academy groups, respectively.

Overall, the survey achieved an 83 percent response rate, and response rates were at or above 80 percent for almost every subgroup. A response rate of 80 percent is considered high by survey research standards. This table also indicates, however, that there were some substantial differences in the response rate across different subgroup categories. For example, those at low risk of dropping out responded at a rate 10 percentage points higher than those at high risk (88 percent, compared with 78 percent), and young women responded at a rate 8 percentage points higher than young men (86 percent, compared with 78 percent).

At the same time, Exhibit 1.1 indicates that, in general, there were only modest differences between Academy and non-Academy response rates within subgroup categories. The first line of the table shows that the very small difference in response rates between the Academy and non-Academy groups is not statistically significant. This means that, overall, there were no systematic differences in the response rates of Academy and non-Academy groups. The table also shows that there were no systematic differences in response rates between Academy and

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the study. This information was obtained from pre-random assignment school records and was confirmed with school staff. Finally, over the course of the data collection period, MDRC learned through contact with the schools and families that four other students were deceased.

non-Academy students who were young men or in any of the graduation cohorts, ethnicity subgroups, or subgroups defined by baseline educational expectation. In two of the sites, however, the response rate was significantly higher for Academy students than for non-Academy students. Also, high-risk Academy students were somewhat more likely to respond than high-risk non-Academy students. Finally, the response rate for female students in the Academy group was also slightly higher than that for female students in the non-Academy group.

In a previous report from this evaluation, the research team reported a significant discrepancy in response rates to the One-Year Post-High School Follow-Up Survey between dropouts and nondropouts. For administration of the Four-Year Post-High School Follow-Up Survey, the evaluation devoted extra resources to achieve a high response rate regardless of dropout status. This extra effort appears to have paid off. The response rate among dropouts from the non-Academy group (70 percent) was lower than the rate among Academy group dropouts (76 percent), but this difference is not statistically significant (not shown in table). The overall response rate of 74 percent for dropouts, while perhaps not ideal, is relatively high for a population that is typically difficult to reach.

Exhibit 1.2 further illustrates the differences between those who responded to the survey and those who did not (regardless of Academy or non-Academy status). It shows that there are a number of significant differences in baseline demographic, family, and educational characteristics. While the differences between respondents and nonrespondents are noteworthy, the high response rate helps ensure that the respondents are still reasonably representative of the full sample. In fact, one might expect that the higher the response rate, the greater the difference would be between those who responded and those who did not.

In short, the analysis of response rates indicates that the samples of students for whom four-year follow-up data are available are not perfectly representative of the full study sample of 1,764 students. Thus, caution should be exercised when attempting to generalize the findings beyond the students who are included in the analyses. Nevertheless, the overall response rates show that data are available for the vast majority of students in the study sample, making the findings fairly representative.

Comparison of Respondents in the Academy and Non-Academy Groups

The main strength of a random assignment research design is that it ensures that there are no systematic differences between the research groups in measured or unmeasured background characteristics when sample members enter the study. As a result, any differences that emerge after that point can be attributed with confidence to the fact that one group had access to an Academy and the other group did not. Previous reports from the Career Academies Evalua-

tion demonstrated that there were indeed no systematic differences in background characteristics between Academy and non-Academy students in the study sample.

Nonetheless, when response rates on a follow-up survey are less the 100 percent, impact estimates may be biased if there are systematic differences in the background characteristics or the pre-random assignment experiences of Academy and non-Academy students who responded. A key question underlying the analyses presented in this report is thus: Do the Four-Year Post-High School Follow-Up Survey response patterns preserve the lack of systematic differences between the research groups ensured by the random assignment design? In other words, does this survey sample exhibit the same lack of systematic differences between Academy and non-Academy students, both overall and for each of the risk and gender subgroups? Exhibit 1.3 presents the average characteristics of Academy and non-Academy students in the survey sample. This table shows that there were no statistically significant differences between the groups on any of the characteristics.

A more rigorous way to test for such differences is to use multiple regression analysis. Exhibit 1.4 presents linear regression estimates and statistical tests of whether there were any systematic differences between Academy and non-Academy students in the survey sample and in each of the three risk subgroups. The first column in Exhibit 1.4 shows that none of the differences in characteristics is statistically significant and that there was no systematic difference overall between the groups. The final row in the first column, the p-value of the F-statistic for the full study sample, is very close to 1, providing strong evidence that there was no overall pattern of differences between Academy and non-Academy students in the survey sample. A p-value of .10 or lower is typically considered a "high" likelihood that there are systematic differences between groups.

The three remaining columns in Exhibit 1.4 present the same analysis for each of the three risk subgroups. These columns indicate that there are slight differences on a few individual characteristics but no overall pattern of differences between Academy and non-Academy students for any of the subgroups. The p-values of the F-statistic for the subgroups range from .367 to .929.

Exhibit 1.5 repeats this analysis for the gender subgroups. Again, while there are slight differences on a few individual characteristics, there is no overall pattern of differences between Academy and non-Academy young men or young women. The p-value of the F-statistic is .944 for the subgroup of young men and .600 for the subgroup of young women.

In summary, the random assignment design resulted in two groups of students who did not differ systematically with respect to background characteristics or prior school experiences. The pattern of survey response rates for the full sample and for each of the risk and gender subgroups preserves this feature of the research design, affording confidence that any

differences in the outcome measures found are the result of the Academy group's enrollment in the Career Academies.

Using Variance Components Model for Impact Estimation and Calculation of Standard Errors

The impact analyses conducted for previous reports from the Career Academies Evaluation were based on a straightforward comparison of the students randomly assigned to the Academy and non-Academy groups, irrespective of the site or cohort in which individual sample members were located. While this analytic method produces unbiased estimates of Career Academy impacts, it may oversimplify the structure of the variance. As a result, it may generate incorrect standard errors. This section of the Technical Resources provides an overview of an analysis model that was used to estimate the impacts presented in the report and to calculate robust standard errors to determine statistical significance.

Most impact analyses use a standard ordinary least squares method to estimate program impacts and calculate the standard error of the impact. These analyses are typically based on the following model:

$$Y_{ij} = \beta_0 + \beta_1 Treat_{ij} + e_{ij} \quad (1)$$

This is the model used to estimate impacts for previous reports from the Career Academies Evaluation. Further discussion within MDRC and advice from colleagues in the field suggested that this model does not account for the actual structure of the random assignment process and, by extension, the structure of the error term (e_{ij}). Specifically, there were nine Career Academy sites. Rather than conducting one large random assignment process, random assignment was conducted separately for each cohort of students admitted in particular school years. This resulted in 20 separate site-by-year cohorts. Therefore, the structure of the data for the Career Academies Evaluation is one in which individuals are clustered within cohorts.[2]

This clustering of sample members within random assignment cohorts may have important implications for the analysis. Impact estimates that fail to account for this phenomenon may result in inaccurate estimates of statistical precision and, therefore, in incorrect inferences regarding the effects of Career Academies on student outcomes. The structure of the Career Acad-

[2]One could also think of the sample as structured in three levels: individuals, within cohorts, within schools. However, the analysis is not attempting to generalize to a broader population of schools. Rather, it is concerned primarily with the effects in these nine Career Academies sites. Thus, this level of analysis would be estimated with fixed effects. Therefore, the analysis can be mathematically reduced to a two-level model.

emies Evaluation data implies a variance components model with two levels: individual students and cohorts within which random assignment took place.

Level 1: Individual Students

$$Y_{ij} = \beta_{0j} + \beta_{1j} Treat_{ij} + \beta_{2j} X_{ij} + e_{ij} \quad (2)$$

where

X_{ij} represents individual characteristics such as race/ethnicity and socioeconomic status; and

β_{2j} represents the relationship between these characteristics to the dependent variable at cohort *j*.[3]

Level 2: Cohorts

$$\beta_{0j} = \gamma_{00} + \mu_{0j} \quad (3)$$

$$\beta_{1j} = \gamma_{10} + \mu_{1j} \quad (4)$$

$$\beta_{2j} = \gamma_{20} \quad (5)$$

where

γ_{00} = the intercept, that is, the control group's grand mean;

μ_{0j} = a random cohort-specific error term representing the difference between the control group's grand mean and the control group's mean at cohort *j*;

γ_{10} = the average "treatment effect", that is, the average difference between the control group's and the treatment group's grand means;

μ_{1j} = a random cohort-specific error term representing the difference between the average treatment effect and the treatment effect at cohort *j*; and

[3]In an effort to add precision to the impact estimates, estimate models generally control for random individual differences in observed characteristics. Therefore, in practice, the multilevel model would also include these additional covariates. There are several options for estimating the relationships between these characteristics and the dependent variable. The simplest is to assume that the relationships between these characteristics and the dependent variable are constant across cohorts in the sample.

γ_{20} = the average relationship between background characteristics and dependent variable across the entire sample.

Composite Model: This system of equations yields the following composite model.

$$Y_{ij} = \gamma_{00} + \gamma_{10} Treat_{ij} + \gamma_{20} X_{ij} + \mu_{1j} Treat_{ij} + \mu_{0j} + e_{ij} \quad (6)$$

Equation 6 yields an estimate of the average treatment effect (γ_{10}), accounting for the fact that individual students are clustered within random assignment cohorts. This treatment effect, γ_{10}, as typically calculated by most statistical packages, represents the average of the cohort-specific treatment effects, with each cohort-specific effect being weighted approximately inversely to its estimated variance.

Equation 6 assumes the existence of random cohort effects in average achievement as well as in the treatment effect. In other words, the model assumes that there is a cohort-specific component to the variance in the outcomes and that there is a cohort-specific component to the variance of the treatment effect. Supplementary analyses were conducted to assess the viability of these assumptions. These analyses yielded two conclusions. First, standard ordinary least squares calculations of standard errors are likely to significantly underestimate the magnitude of the standard errors and, thus, to overestimate the statistical significance of the impacts. This suggests the need for a multilevel variance components model that accounts for the clustering of sample members within random assignment cohorts. In other words, the μ_{0j} term (the random cohort-specific error term representing the difference between the control group's grand mean and the control group's mean at cohort *j*) in Equation 6 should be included to ensure accurate calculation of the standard errors.

Second, the supplementary analyses indicated that the treatment effect does not vary significantly across cohorts. Therefore, it is appropriate to estimate a model within which the treatment effect is *fixed* rather than random at level 2. In other words, the μ_{1j} term (the random cohort-specific error term representing the difference between the average treatment effect and the treatment effect at cohort *j*) in Equation 6 can be assumed to be zero and the estimation model need not allow for variation in *impacts* across cohorts. Thus, the following model was used to estimate the impact of Career Academies on student outcomes and to calculate robust standard errors:

$$Y_{ij} = \gamma_{00} + \gamma_{10} * Treat_{ij} + \gamma_{20} X_{ij} + \mu_{0j} + e_{ij} \quad (7)$$

Impacts and Program Participation

A final analysis issue concerns the relationship between students' actual exposure to the Career Academies and the impacts that the programs had on students' success in high school and beyond. As discussed in the text of this report and more extensively in previous reports, student attrition is a naturally occurring feature of Career Academies and, in fact, of high schools in general. About 15 percent of the students in the Academy group never enrolled in a Career Academy program, and an additional 30 percent enrolled for one or more semesters but eventually left the Academy in which they enrolled before the end of high school. In addition, a small percentage of students in the non-Academy group were inadvertently allowed to enroll in an Academy. It is important to note that the background characteristics of students who remained enrolled in the Academies differed from those who enrolled for a time and then left, making it difficult to make an unbiased estimate of the impacts that the Academies had for students who remained in their programs.

For example, high-risk students in the Academy group were less likely than medium- and low-risk students to enroll in a Career Academy and were more likely to have left the programs if they did enroll. If high-risk students (including those who dropped out of high school altogether) were excluded from the Academy group but included in the non-Academy group, then comparisons between the groups would systematically overestimate the impacts of the Academy programs. In other words, if the high-risk (and less engaged) Academy students were excluded from the analysis, then it would appear that the Academies increased student engagement more than they actually had. However, there were also students who left the Academies and who were highly engaged in school but who wished to move on to a school environment that was better suited to their evolving needs and interests. If these students were excluded from the Academy group but included in the non-Academy group, then it would appear that the Academies reduced student engagement.

In order to produce unbiased estimates of the Academies' impacts, therefore, the primary analysis conducted for the evaluation includes all students in the Academy and non-Academy groups, regardless of their Academy enrollment status at any point after random assignment. In this way, the findings reflect the impact of Career Academies under real-world conditions, which include a high rate of student attrition. Studying Career Academies under these conditions is arguably the most policy-relevant approach.

Of course, it is highly unlikely that the Career Academies had much effect on students in the Academy group who never enrolled in the programs. Nor can it be assumed that the Academies had no effect on students in the study's non-Academy group who were allowed to enroll in the programs inadvertently. From this perspective, the impact estimates may be perceived as being diluted by the inclusion of some students in the Academy group who never enrolled in the programs and by the small proportion of non-Academy group members who were

inadvertently allowed to enroll. It is therefore useful to examine impact estimates that account for these "crossovers" in research status, particularly estimates that indicate the *impact per enrollee* on each outcome. The impact per enrollee can be interpreted as the impact from actually enrolling in an Academy as opposed to simply being recruited and selected for admission.[4]

Adjusting for crossovers does not substantially change the overall pattern of impacts discussed in this report. For students who completed the Four-Year Post-High School Follow-Up Survey, 87 percent of the Academy group enrolled in an Academy for at least one semester during high school, and 6 percent of the non-Academy group did so. The impact per enrollee adjustment is obtained by dividing the observed impact estimates by the difference between these rates, .81, which is equivalent to multiplying each impact estimate by 1.25. (If the percentage of students who enrolled in an Academy had been 100 percent in the Academy group and 0 percent in the non-Academy group, then the difference between the rates would be 1.0, and no adjustment would be necessary.) As discussed in the report, most of the impact estimates are not sufficiently large to have this adjustment make them much larger or more policy-relevant.

Units 3, 4, and 5 of the Technical Resources for this report include the impact per enrollee, which is defined as the observed impact divided by the difference between the percentages of Academy and non-Academy students who ever enrolled in an Academy. These are listed in the rightmost column of the relevant tables.

[4]This adjustment, which was proposed by Bloom and by Orr and associates (cited below), relies on two important assumptions: (1) that selection for the Academy group had no effect on students who did not enroll in an Academy and (2) that the average outcome levels for non-Academy students who were inadvertently allowed to enroll would have been the same if they had been assigned to the Academy group initially. Thus, the adjustment can be seen as discounting both the zero impact for the Academy group members who did not enroll in the program and the nonzero impact for the non-Academy group members who got the same treatment as the Academy enrollees. See Howard S. Bloom "Accounting for No-Shows in Experimental Evaluation Designs," *Evaluation Review* 8 (2): 225-246 (1984); and Larry Orr, Howard Bloom, Stephen Bell, Fred Doolittle, Winston Lin, and George Cave, *Does Training for the Disadvantaged Work?* (Washington, DC: Urban Institute Press, 1996).

Exhibit 1.1

Response Rates for the Four-Year Post-High School Follow-Up Survey for the Full Sample and Selected Subgroups

Subgroup	Sample Size	Total (%)	Academy Group (%)	Non-Academy Group (%)
Full sample	1764	82.7	83.3	81.9
Site				
Anacostia	114	79.0	82.5	74.5
L.C./Eastern	259	81.9	86.4	76.5 **
Socorro	199	85.9	89.7	81.5 *
Miami Beach	265	77.0	76.2	77.9
Westinghouse	66	78.8	80.6	76.7
Independence	119	84.0	81.5	87.0
Silver Creek	169	84.0	81.7	86.8
Valley	279	83.2	83.6	82.7
Watsonville	294	86.7	85.0	88.8
Graduation cohort				
1996	441	84.1	84.3	83.9
1997	632	83.1	82.6	83.6
1998	691	81.3	83.3	79.0
Risk subgroup				
High risk	461	78.1	82.1	73.3 **
Medium risk	877	82.3	80.5	84.5
Low risk	426	88.3	90.4	85.7
Gender				
Male	773	78.1	77.3	79.1
Female	991	86.2	88.1	83.9 *
Ethnicity				
Hispanic	972	83.1	84.0	82.1
Black	523	79.9	82.2	77.1
White	111	83.8	79.0	88.9
Asian/Native American	124	86.3	84.5	88.7
Educational expectations				
Does not expect to graduate from college	614	82.6	81.8	83.5
Graduate from college	671	82.4	83.8	80.6
Attend higher level of school after college	448	82.8	84.8	80.7

(continued)

Exhibit 1.1 (continued)

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: A chi-square test was used to evaluate differences between Academy and non-Academy response rates. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. High-risk students have an array of these characteristics associated with the highest likelihood of dropping out; low-risk students have an array of these characteristics associated with the lowest likelihood of dropping out; medium-risk students represent the remaining students with neither a particularly high nor particularly low likelihood of dropping out.

Career Academies Evaluation

Exhibit 1.2

Differences Between Respondents' and Nonrespondents' Background Characteristics

Characteristic	Full Sample (%)	Respondents (%)	Non-Respondents (%)	
Demographic and family characteristics				
Gender				
Male	43.8	41.4	55.2	***
Female	56.2	58.6	44.8	
Age of student at time of application				
13 or younger	8.6	8.7	8.2	**
14	35.6	36.7	30.5	
15	46.1	45.8	47.2	
16 or older	9.7	8.8	14.1	
Race/ethnicity				
Hispanic	56.2	56.7	53.9	
Black	30.2	29.3	34.5	
White	6.4	6.5	5.9	
Asian or Native American	7.2	7.5	5.6	
Student speaks limited English[a]	7.6	7.6	7.3	
Student lives with				
Mother and father	61.7	63.3	54.3	**
Mother only	28.6	27.9	31.8	
Father only	4.6	4.2	6.6	
Other family/nonrelative	5.1	4.6	7.3	
Student lives in single-parent household	38.3	36.7	45.7	***
Father's education level				
Did not finish high school	39.8	40.5	36.1	
High school graduate/GED recipient	32.4	31.9	34.6	
Completed some post-secondary	15.1	15.5	13.5	
College graduate	12.7	12.0	15.9	
Mother's education level				
Did not finish high school	36.1	37.6	28.8	*
High school graduate/GED recipient	34.8	34.2	37.9	
Completed some post-secondary	18.2	17.8	20.2	
College graduate	10.8	10.4	13.2	
Neither parent has high school diploma	28.6	29.5	24.2	*
Parental work				
Both parents work	47.3	48.6	41.3	***
Father works	23.8	23.3	25.9	
Mother works	17.8	18.0	16.8	
Neither parent works	11.1	10.0	16.1	

(continued)

Exhibit 1.2 (continued)

Characteristic	Full Sample (%)	Respondents (%)	Non-Respondents (%)	
Family receives welfare or food stamps	24.2	23.6	27.6	
Family mobility in past two years				
Have not moved	59.4	61.6	49.2	***
Moved 1 or 2 times	33.6	32.2	39.9	
Moved 3 or more times	7.0	6.2	10.9	
Student is home alone more than 3 hours per day	13.5	13.4	14.3	
Educational characteristics				
8th-grade math test score[b]				
75th percentile or higher	8.5	8.8	7.1	
50th to 74th percentile	19.4	19.4	19.6	
25th to 49th percentile	32.1	31.6	35.3	
24th percentile or lower	40.0	40.3	38.0	
8th-grade reading test score[c]				
75th percentile or higher	8.3	8.7	5.9	
50th to 74th percentile	20.9	20.7	21.6	
25th to 49th percentile	33.5	32.9	36.8	
24th percentile or lower	37.4	37.7	35.7	
Student does not feel safe at school	23.2	22.8	25.2	
Frequency of cutting classes				
Never	78.9	79.8	74.7	*
At least 1 time a week	19.7	19.0	23.0	
Daily	1.4	1.2	2.3	
Sent to office for misbehavior				
Never	81.3	81.9	78.4	
1-2 times	15.7	15.2	17.9	
3-10 times	3.0	2.8	3.7	
Educational expectations				
Does not expect to graduate from college	35.4	35.4	35.4	
Graduate from college	38.7	38.6	39.1	
Attend higher level of school after college	25.9	25.9	25.5	
Hours per week spent on homework				
1 hour or less	28.8	28.7	29.6	
2-3 hours	38.2	38.0	39.1	
4-6 hours	17.4	17.5	16.8	
7 hours or more	15.6	15.8	14.5	
Hours per day spent watching TV				
Less than an hour	12.3	12.0	13.5	
1-2 hours	27.1	26.7	29.1	
2-3 hours	26.8	27.3	24.3	
Over 3 hours	33.8	34.0	33.1	

(continued)

Exhibit 1.2 (continued)

Characteristic	Full Sample (%)	Respondents (%)	Non-Respondents (%)	
Student has worked for pay	36.3	35.7	39.1	
Characteristics associated with dropping out of school				
Attendance rate, year prior to random assignment				
96-100%	54.1	54.9	50.7	**
91-95%	24.1	24.5	21.9	
86-90%	11.0	10.6	12.6	
85% or lower	10.8	10.0	14.9	
Credits earned in 9th grade[d]				
5 or more credits	80.9	81.8	76.5	***
3-4 credits	13.7	14.0	12.4	
2 or fewer credits	5.5	4.2	11.1	
Grade point average in year of random assignment[e]				
3.1 or higher	36.1	37.2	31.1	
2.1-3.0	38.1	38.0	39.0	
2.0 or lower	25.7	24.8	30.0	
Student is overage for grade level[f]	21.1	19.7	28.2	***
Student transferred schools 2 or more times	27.4	25.1	38.2	***
Student has sibling who dropped out of high school	20.2	20.0	20.7	
Risk of dropping out of high school[g]				
High risk	26.1	24.7	33.0	***
Medium risk	49.7	49.5	50.7	
Low risk	24.1	25.8	16.3	
Sample size	1,764	1,458	306	

(continued)

Exhibit 1.2 (continued)

SOURCES: MDRC calculations from the Career Academies Evaluation Student Baseline Questionnaire Database and Student School Records Database.

NOTES: All characteristics were measured at the time students applied to the Career Academy program and prior to being randomly selected to the Academy and non-Academy groups.

Invalid or missing values are not included in individual variable distributions. Rounding may cause slight discrepancies in calculating of sums and differences.

A chi-square test was applied to differences in the distribution of characteristics across the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent. Double brackets [ ] indicate that the chi-square may not be a valid test.

[a]These are students who responded that they spoke English "not well" or "not at all."

[b]Several different standardized, nationally normed math tests were administered to students, depending on the district where their school was located and the year they entered the study. National percentile scores were used because they were the only standardized scores available across tests.

[c]Several different standardized, nationally normed reading tests were administered to students, depending on the district where their school was located and the year they entered the study. National percentile scores were used because they were the only standardized scores available across tests.

[d]This was applicable only to students who applied to the Career Academy at the end of their 9th-grade year.

[e]Grade point averages were converted to a standard 4.0 scale from 100-point or 5-point scales for some sites.

[f]A student is defined as overage for grade at the time of random assignment if she or he turns 15 before the start of the 9th grade, or 16 before the start of the 10th grade. This indicates that the student was likely to have been held back in a previous grade.

[g]The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. High-risk students have an array of these characteristics associated with the highest likelihood of dropping out; low-risk students have an array of these characteristics associated with the lowest likelihood of dropping out; medium-risk students represent the remaining students with neither a particularly high nor particularly low likelihood of dropping out.

Career Academies Evaluation

Exhibit 1.3

Differences Between Academy and Non-Academy Sample Members' Background Characteristics

Characteristic	Full Sample (%)	Academy Group (%)	Non-Academy Group (%)
Demographic and family characteristics			
Gender			
Male	41.4	41.4	41.4
Female	58.6	58.6	58.6
Age of student at time of application			
13 or younger	8.7	8.0	9.4
14	36.7	36.1	37.4
15	45.8	47.0	44.4
16 or older	8.8	8.9	8.7
Race/ethnicity			
Hispanic	56.7	56.1	57.4
Black	29.3	30.6	27.8
White	6.5	5.7	7.5
Asian or Native American	7.5	7.6	7.3
Student speaks limited English[a]	7.6	6.6	8.9
Student lives with			
Mother and father	63.3	62.1	64.7
Mother only	27.9	28.1	27.6
Father only	4.2	4.7	3.4
Other family/nonrelative	4.6	5.0	4.2
Student lives in single-parent household	36.7	37.9	35.3
Father's education level			
Did not finish high school	40.5	39.2	42.2
High school graduate/GED recipient	31.9	32.0	31.8
Completed some post-secondary	15.5	15.5	15.5
College graduate	12.0	13.3	10.5
Mother's education level			
Did not finish high school	37.6	36.4	39.1
High school graduate/GED recipient	34.2	34.2	34.2
Completed some post-secondary	17.8	18.6	16.8
College graduate	10.4	10.8	9.8
Neither parent has high school diploma	29.5	29.2	29.9
Parental work			
Both parents work	48.6	47.8	49.7
Father works	23.3	23.3	23.4
Mother works	18.0	19.5	16.3
Neither parent works	10.0	9.5	10.7

(continued)

Exhibit 1.3 (continued)

Characteristic	Full Sample (%)	Academy Group (%)	Non-Academy Group (%)
Family receives welfare or food stamps	23.6	23.9	23.2
Family mobility in past two years			
Have not moved	61.6	60.5	62.9
Moved 1 or 2 times	32.2	33.3	30.9
Moved 3 or more times	6.2	6.1	6.2
Student is home alone more than 3 hours per day	13.4	13.5	13.2
Educational characteristics			
8th-grade math test score[b]			
75th percentile or higher	8.8	8.7	8.8
50th to 74th percentile	19.4	19.7	18.9
25th to 49th percentile	31.6	30.2	33.3
24th percentile or lower	40.3	41.4	39.0
8th-grade reading test score[c]			
75th percentile or higher	8.7	9.0	8.4
50th to 74th percentile	20.7	22.2	18.9
25th to 49th percentile	32.9	31.3	34.8
24th percentile or lower	37.7	37.5	37.9
Student does not feel safe at school	22.8	22.4	23.3
Frequency of cutting classes			
Never	79.8	80.3	79.3
At least 1 time a week	19.0	19.0	19.0
Daily	1.2	0.8	1.7
Sent to office for misbehavior			
Never	81.9	80.8	83.3
1-2 times	15.2	16.2	14.0
3-10 times	2.8	3.0	2.7
Educational expectations			
Does not expect to graduate from college	35.4	34.3	36.8
Graduate from college	38.6	40.9	35.9
Attend higher level of school after college	25.9	24.8	27.2
Hours per week spent on homework			
1 hour or less	28.7	27.3	30.3
2-3 hours	38.0	39.8	35.9
4-6 hours	17.5	18.4	16.4
7 hours or more	15.8	14.5	17.3
Hours per day spent watching TV			
Less than an hour	12.0	11.1	13.1
1-2 hours	26.7	26.3	27.1
2-3 hours	27.3	26.0	29.0
Over 3 hours	34.0	36.6	30.8

(continued)

Exhibit 1.3 (continued)

Characteristic	Full Sample (%)	Academy Group (%)	Non-Academy Group (%)
Student has worked for pay	35.7	35.5	35.9
Characteristics associated with dropping out of school			
Attendance rate, year prior to random assignment			
96-100%	54.9	53.2	56.9
91-95%	24.5	23.8	25.4
86-90%	10.6	12.1	8.9
85% or lower	10.0	10.8	8.9
Credits earned in 9th grade[d]			
5 or more credits	81.8	81.1	82.7
3-4 credits	14.0	14.7	13.1
2 or fewer credits	4.2	4.2	4.2
Grade point average in year of random assignment[e]			
3.1 or higher	37.2	36.2	38.4
2.1-3.0	38.0	38.9	36.8
2.0 or lower	24.8	24.9	24.8
Student is overage for grade level[f]	19.7	20.2	19.0
Student transferred schools 2 or more times	25.1	25.3	24.8
Student has sibling who dropped out of high school	20.0	19.6	20.6
Risk of dropping out of high school[g]			
High risk	24.7	25.8	23.4
Medium risk	49.5	48.2	51.1
Low risk	25.8	26.0	25.5
Sample size	1,458	799	659

(continued)

Exhibit 1.3 (continued)

SOURCES: MDRC calculations from the Career Academies Evaluation Student Baseline Questionnaire Database and Student School Records Database.

NOTES: All characteristics were measured at the time students applied to the Career Academy program and prior to being randomly selected to the Academy and non-Academy groups.

Invalid or missing values are not included in individual variable distributions. Rounding may cause slight discrepancies in calculating of sums and differences.

A chi-square test was applied to differences in the distribution of characteristics across the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent. Double brackets [ ] indicate that the chi-square may not be a valid test.

[a]These are students who responded that they spoke English "not well" or "not at all."

[b]Several different standardized, nationally normed math tests were administered to students, depending on the district where their school was located and the year they entered the study. National percentile scores were used because they were the only standardized scores available across tests.

[c]Several different standardized, nationally normed reading tests were administered to students, depending on the district where their school was located and the year they entered the study. National percentile scores were used because they were the only standardized scores available across tests.

[d]This was applicable only to students who applied to the Career Academy at the end of their 9th-grade year.

[e]Grade point averages were converted to a standard 4.0 scale from 100-point or 5-point scales for some sites.

[f]A student is defined as overage for grade at the time of random assignment if she or he turns 15 before the start of the 9th grade, or 16 before the start of the 10th grade. This indicates that the student was likely to have been held back in a previous grade.

[g]The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. High-risk students have an array of these characteristics associated with the highest likelihood of dropping out; low-risk students have an array of these characteristics associated with the lowest likelihood of dropping out; medium-risk students represent the remaining students with neither a particularly high nor particularly low likelihood of dropping out.

Career Academies Evaluation

Exhibit 1.4

Regression Coefficients for the Probability of Being in the Program Group for the Full Study Sample and Risk Subgroups (Four-Year Post-High School Follow-Up Survey Sample, N = 1,458)

Variable	Full Study Sample Parameter Estimate (Standard Error)	High-Risk Subgroup Parameter Estimate (Standard Error)	Medium-Risk Subgroup Parameter Estimate (Standard Error)	Low-Risk Subgroup Parameter Estimate (Standard Error)
Intercept	0.257	-1.259	0.614	2.190
	(0.429)	(0.814)	(0.688)	(1.468)
Site 1	0.009	-0.125	0.092	-0.047
	(0.080)	(0.157)	(0.118)	(0.183)
Site 2	0.007	0.239	-0.057	-0.097
	(0.089)	(0.172)	(0.132)	(0.200)
Site 3	0.091	0.522	0.033	-0.044
	(0.102)	(0.412)	(0.145)	(0.232)
Site 4	-0.033	0.117	-0.017	-0.099
	(0.103)	(0.186)	(0.160)	(0.315)
Site 5	-0.027	-0.029	-0.031	-0.069
	(0.068)	(0.112)	(0.110)	(0.165)
Site 6	-0.024	-0.050	0.111	-0.228 *
	(0.061)	(0.101)	(0.102)	(0.136)
Site 7	-0.005	-0.134	0.137 *	-0.105
	(0.053)	(0.099)	(0.079)	(0.118)
Site 8	0.024	0.021	0.079	-0.080
	(0.055)	(0.103)	(0.090)	(0.134)
Graduation cohort 1996	0.039	0.034	0.043	0.025
	(0.045)	(0.091)	(0.074)	(0.095)
Graduation cohort 1997	0.021	-0.023	0.032	0.030
	(0.037)	(0.088)	(0.053)	(0.076)
In 8th grade at application to Academy	0.010	-0.005	0.025	0.344
	(0.102)	(0.212)	(0.154)	(0.290)
Female	-0.012	0.098 *	-0.059	-0.009
	(0.028)	(0.058)	(0.040)	(0.057)
Age at application to Academy	0.036	0.086 *	0.024	-0.007
	(0.025)	(0.049)	(0.036)	(0.053)

(continued)

Exhibit 1.4 (continued)

Variable	Full Study Sample Parameter Estimate (Standard Error)	High-Risk Subgroup Parameter Estimate (Standard Error)	Medium-Risk Subgroup Parameter Estimate (Standard Error)	Low-Risk Subgroup Parameter Estimate (Standard Error)
Hispanic	0.066	0.175	-0.026	0.172
	(0.058)	(0.129)	(0.079)	(0.130)
Black	0.098	0.177	0.051	0.162
	(0.076)	(0.148)	(0.110)	(0.175)
Asian/Native American	0.100	0.137	0.046	0.312 **
	(0.076)	(0.154)	(0.116)	(0.158)
75th percentile or higher in 8th-grade math[a]	-0.003	0.049	0.035	-0.114
	(0.064)	(0.221)	(0.093)	(0.109)
25th percentile or lower in 8th-grade math	0.039	0.140 *	0.010	-0.045
	(0.037)	(0.072)	(0.052)	(0.081)
Missing 8th-grade math test score	0.167	0.269	0.094	-0.071
	(0.154)	(0.232)	(0.299)	(0.307)
75th percentile or higher in 8th-grade reading[b]	0.042	0.050	0.002	0.140
	(0.058)	(0.163)	(0.080)	(0.106)
25th percentile or lower in 8th-grade reading	-0.022	-0.041	-0.013	0.008
	(0.037)	(0.071)	(0.054)	(0.080)
Missing 8th-grade reading percentile	-0.195	-0.246	-0.093	-0.021
	(0.157)	(0.234)	(0.304)	(0.321)
Has sibling who dropped out	-0.023	0.003	-0.059	-0.268
	(0.034)	(0.058)	(0.051)	(0.171)
Is overage for grade level[c]	-0.023	-0.034	-0.064	0.150
	(0.043)	(0.076)	(0.062)	(0.147)
Transferred schools 2 or more times	0.004	0.017	0.016	-0.086
	(0.032)	(0.059)	(0.046)	(0.109)
Attendance rate, year prior to random assignment	-0.004	0.003	-0.005	-0.019 *
	(0.002)	(0.004)	(0.004)	(0.012)
Credits earned in 9th grade[d]	0.001	0.017	-0.005	0.047
	(0.010)	(0.019)	(0.018)	(0.038)
Grade point average, year of random assignment[e]	0.010	-0.022	0.038	-0.001
	(0.018)	(0.046)	(0.030)	(0.047)

(continued)

Exhibit 1.4 (continued)

Variable	Full Study Sample Parameter Estimate (Standard Error)	High-Risk Subgroup Parameter Estimate (Standard Error)	Medium-Risk Subgroup Parameter Estimate (Standard Error)	Low-Risk Subgroup Parameter Estimate (Standard Error)
Sample size	1458	360	722	376
Degrees of freedom	28	28	28	28
Mean of dependent variable	0.548	0.572	0.533	0.553
R-square	0.010	0.083	0.025	0.054
F-statistic	0.510	1.070	0.640	0.710
p-value of F-statistic	0.984	0.367	0.929	0.864

SOURCE: MDRC calculations from the Career Academies Evaluation Post-High School Follow-Up Survey Database.

NOTES: The statistical significance of parameter estimates is indicated as *** = 1 percent, ** = 5 percent, * = 10 percent.

The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. High-risk students have an array of these characteristics associated with the highest likelihood of dropping out; low-risk students have an array of these characteristics associated with the lowest likelihood of dropping out; medium-risk students represent the remaining students with neither a particularly high nor particularly low likelihood of dropping out.

[a]Several different standardized, nationally normed math tests were administered to students, depending on the district where their school was located and the year they entered the study. National percentile scores were used because they were the only standardized scores available across tests.

[b]Several different standardized, nationally normed reading tests were administered to students, depending on the district where their school was located and the year they entered the study. National percentile scores were used because they were the only standardized scores available across tests.

[c]A student is defined as overage for grade at the time of random assignment if she or he turns 15 before the start of the 9th grade, or 16 before the start of the 10th grade. This indicates that the student was likely to have been held back in a previous grade.

[d] Credits earned in 9th grade applies only to students who applied to the Career Academy at the end of their 9th-grade year.

[e]Grade point averages were converted to a standard 4.0 scale from 100-point or 5-point scales for some sites.

A student is defined as overage for grade at the time of random assignment if she or he turns 15 before the start of the 9th grade, or 16 before the start of the 10th grade. This indicates that the student was likely to have been held back in a previous grade.

Career Academies Evaluation

Exhibit 1.5

Regression Coefficients for the Probability of Being in the Program Group for the Full Study Sample and Gender Subgroups (Four-Year Post-High School Follow-Up Survey Sample, N = 1,458)

Variable	Full Study Sample Parameter Estimate (Standard Error)	Young Men Parameter Estimate (Standard Error)	Young Women Parameter Estimate (Standard Error)
Intercept	0.257	1.048	-0.345
	(0.429)	(0.688)	(0.563)
Site 1	0.009	0.075	-0.045
	(0.080)	(0.134)	(0.101)
Site 2	0.007	0.024	-0.017
	(0.089)	(0.151)	(0.111)
Site 3	0.091	0.061	0.119
	(0.102)	(0.178)	(0.126)
Site 4	-0.033	0.012	-0.047
	(0.103)	(0.157)	(0.144)
Site 5	-0.027	-0.072	-0.009
	(0.068)	(0.105)	(0.091)
Site 6	-0.024	-0.117	0.044
	(0.061)	(0.091)	(0.086)
Site 7	-0.005	-0.080	0.044
	(0.053)	(0.086)	(0.070)
Site 8	0.024	-0.043	0.086
	(0.055)	(0.089)	(0.072)
Graduation cohort 1996	0.039	0.089	0.004
	(0.045)	(0.070)	(0.060)
Graduation cohort 1997	0.021	0.111 *	-0.032
	(0.037)	(0.061)	(0.047)
In 8th grade at application to Academy	0.010	0.040	-0.021
	(0.102)	(0.173)	(0.128)
Female	-0.012	n/a	n/a
	(0.028)	n/a	n/a
Age at application to Academy	0.036	-0.028	0.078 **
	(0.025)	(0.040)	(0.033)

(continued)

Exhibit 1.5 (continued)

Variable	Full Study Sample Parameter Estimate (Standard Error)	Young Men Parameter Estimate (Standard Error)	Young Women Parameter Estimate (Standard Error)
Hispanic	0.066	-0.039	0.197 **
	(0.058)	(0.080)	(0.087)
Black	0.098	-0.062	0.282 ***
	(0.076)	(0.110)	(0.108)
Asian/Native American	0.100	0.024	0.192 *
	(0.076)	(0.105)	(0.114)
75th percentile or higher in 8th-grade math[a]	-0.003	0.066	-0.068
	(0.064)	(0.090)	(0.093)
25th percentile or lower in 8th-grade math	0.039	0.138 **	-0.032
	(0.037)	(0.059)	(0.047)
Missing 8th-grade math test score	0.167	0.469	0.101
	(0.154)	(0.363)	(0.172)
75th percentile or higher in 8th-grade reading[b]	0.042	-0.038	0.107
	(0.058)	(0.087)	(0.079)
25th percentile or lower in 8th-grade reading	-0.022	-0.042	-0.005
	(0.037)	(0.059)	(0.049)
Missing 8th-grade reading percentile	-0.195	-0.491	-0.140
	(0.157)	(0.368)	(0.175)
Has sibling who dropped out	-0.023	-0.013	-0.026
	(0.034)	(0.056)	(0.043)
Is overage for grade level[c]	-0.023	0.042	-0.055
	(0.043)	(0.064)	(0.058)
Transferred schools 2 or more times	0.004	-0.003	0.009
	(0.032)	(0.049)	(0.042)
Attendance rate, year prior to random assignment	-0.004	-0.002	-0.005 *
	(0.002)	(0.004)	(0.003)
Credits earned in 9th grade[d]	0.001	0.015	-0.008
	(0.010)	(0.016)	(0.014)
Grade point average, year of random assignment[e]	0.010	0.010	0.020
	(0.018)	(0.029)	(0.024)

(continued)

Exhibit 1.5 (continued)

Variable	Full Study Sample Parameter Estimate (Standard Error)	Young Men Parameter Estimate (Standard Error)	Young Women Parameter Estimate (Standard Error)
Sample size	1458	604	854
Degrees of freedom	28	27	27
Mean of dependent variable	0.548	0.548	0.548
R-square	0.010	0.028	0.029
F-statistic	0.510	0.610	0.910
p-value of F-statistic	0.984	0.944	0.600

SOURCE: MDRC calculations from the Career Academies Evaluation Post-High School Follow-Up Survey Database.

NOTES: The statistical significance of parameter estimates is indicated as *** = 1 percent, ** = 5 percent, * = 10 percent.

The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. High-risk students have an array of these characteristics associated with the highest likelihood of dropping out; low-risk students have an array of these characteristics associated with the lowest likelihood of dropping out; medium-risk students represent the remaining students with neither a particularly high nor particularly low likelihood of dropping out.

[a] Several different standardized, nationally normed math tests were administered to students, depending on the district where their school was located and the year they entered the study. National percentile scores were used because they were the only standardized scores available across tests.

[b] Several different standardized, nationally normed reading tests were administered to students, depending on the district where their school was located and the year they entered the study. National percentile scores were used because they were the only standardized scores available across tests.

[c] A student is defined as overage for grade at the time of random assignment if she or he turns 15 before the start of the 9th grade, or 16 before the start of the 10th grade. This indicates that the student was likely to have been held back in a previous grade.

[d] Credits earned in 9th grade applies only to students who applied to the Career Academy at the end of their 9th-grade year.

[e] Grade point averages were converted to a standard 4.0 scale from 100-point or 5-point scales for some sites.

Unit 2

Comparison of Academy Students and Non-Academy Students with National Data

In an effort to provide further context for evaluating the performance of students in the study sample, the report compares outcomes for the non-Academy group with similar students identified within a nationally representative sample. For this comparison, the Career Academies Evaluation drew on data collected from a nationally representative sample of students in the National Education Longitudinal Study (NELS) of 1988 through 2000. This section describes the NELS dataset and explains how outcomes for use in this comparison were estimated.

NELS, which is sponsored by the U.S. Department of Education, followed a nationally representative sample of nearly 25,000 students from the 8th grade through the eighth year following their scheduled graduation from high school. The first round of NELS surveys was administered to students in the 8th grade in 1988, and follow-up surveys were administered in 1990, 1992, 1994, and 2000. The study collected detailed demographic information as well as data on high school experiences and outcomes, post-secondary education, and employment. These data are publicly available through the National Center for Education Statistics.[1]

The goal of this analysis was to identify a group of students in the NELS sample who were similar to the students in the Career Academies Evaluation in the following ways: the types of high schools they attended, the type of educational programs in which they were enrolled, and their individual background characteristics and school experiences prior to the 10th grade. Thus, only a subset of the full NELS sample was used in the analysis, and outcomes were adjusted to account for differences in measured background characteristics between the NELS and Career Academy samples. Following is an overview of the strategy and specific criteria used to identify such a comparison sample.

First, in order to maintain comparability with the schools in the Career Academies Evaluation, only NELS sample members from public, nonselective, comprehensive high schools located in urban school districts were included in the comparisons. The NELS variables specifying which were urban public schools were straightforward to interpret; however, in order to identify which high schools were comprehensive, it was necessary to rely on several different variables describing the types of schools that students attended. The following were excluded from the analysis: schools that never or rarely admitted students based on where they resided, schools that always admitted students based on admission tests or auditions, schools that always admitted students based on some other admission criteria, and students who were enrolled in special education programs for the physically and/or learning disabled.

[1]For data products and a publications list, see the National Center for Education Statistics Web site: nces.ed.gov/surveys/nels88/.

Second, the analyses focused on three subsamples of students in the NELS database: (1) students who reported being enrolled in an academic-honors or college-preparatory program in their high school, (2) students who reported being enrolled in the high school's general curriculum program, and (3) students who reported being enrolled in a career, technical, or vocational program. In general, Career Academies tend to be a mix of these three types of high school programs or curriculum tracks, although they are less comparable to the academic-honors or college-preparatory programs than to the other two types of programs. Also, based on information from student transcripts, it appears that non-Academy students in the study sample tended to be enrolled in their high school's general curriculum program, and many of them took at least one career, vocational, or technical course.

Third, because virtually all the students in the non-Academy group completed the 9th grade, the analyses presented here focus on students in the NELS sample who were 10th-graders in 1990 (rather than on all students who were 8th-graders in 1988).

Once a comparison group was identified, a set of equivalent outcome measures was created. In general, the outcomes used by NELS were very similar to those measured in the Career Academies Evaluation. One significant difference, however, was that the NELS study followed students through eight years after their scheduled graduation from high school, whereas the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey was administered 48 months following scheduled graduation.

In order to make the outcome measures comparable, the analysis focuses only on outcomes attained by students in the NELS sample through June 1996 — 48 months after scheduled graduation. For example, any student who earned a high school credential after that point was considered a nongraduate for the purpose of the comparisons made in this report. Likewise, NELS data on post-secondary degree attainment also were truncated to cover the period through June 1996.

Finally, the outcomes for the NELS sample were regression-adjusted and mean-centered based on the distribution of background characteristics and prior school experiences among the non-Academy students in the Career Academies Evaluation sample. This means that the numbers presented from the NELS dataset in this report do not represent simple averages of outcomes for an subsample of NELS students. Rather, these adjustments allowed for a closer approximation of what the NELS outcome levels would have looked like if the NELS sample had a distribution of characteristics more like those in the Career Academies Evaluation sample.

By design, the measures of background characteristics collected by the Career Academies Evaluation at the start of the study are very similar to those used by NELS. This is because many of the questions used in the Career Academies Evaluation Baseline Questionnaire

were drawn from the NELS surveys.[2] Following is a list of the characteristics — all measured at baseline — that were used in the estimation of outcomes for the NELS sample:

- Gender
- Ethnicity
- Lives in a single-parent household
- Has an older sibling who dropped out of high school
- Is overage for his or her grade
- Has parents who did not finish high school
- Has limited English proficiency
- Is unsupervised for three or more hours per day
- 6th- to 8th-grade English grades
- 6th- to 8th-grade math grades
- Baseline year's attendance rate (8th grade in NELS; 8th or 9th grade in the Career Academies Evaluation)

Adjusting the NELS outcomes to reflect the distribution of background characteristics in the Career Academy Evaluation sample entailed three steps: (1) using multiple regression to identify the relationship between each outcome and the above characteristics, for the full sample of urban public school students and for each of the three curriculum subgroups, (2) calculating the mean for the Career Academy Evaluation sample on each of the above characteristics, and (3) multiplying the Career Academy sample's means by the parameter estimates from each regression and adding them to each intercept.

All these estimates incorporate analysis weights calculated by NELS researchers to account for both intentional oversampling of certain groups (for example, Hispanic students) as well as survey nonresponse (the 2000 survey achieved a 77 percent unweighted response rate, or an 83 percent weighted response rate).[3] These weights were calculated for the full sample and

[2]James J. Kemple and JoAnn Leah Rock, *Career Academies: Early Implementation Lessons from a 10-Site Evaluation* (New York: MDRC, 1996).

[3]See National Center for Education Statistics, *National Education Longitudinal Study of 1988: Base-Year to Fourth Follow-Up Data File User's Manual* (Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, 2002), p. 128. See in particular Chapter III: "Sample Design, Weighting, and Design Effects."

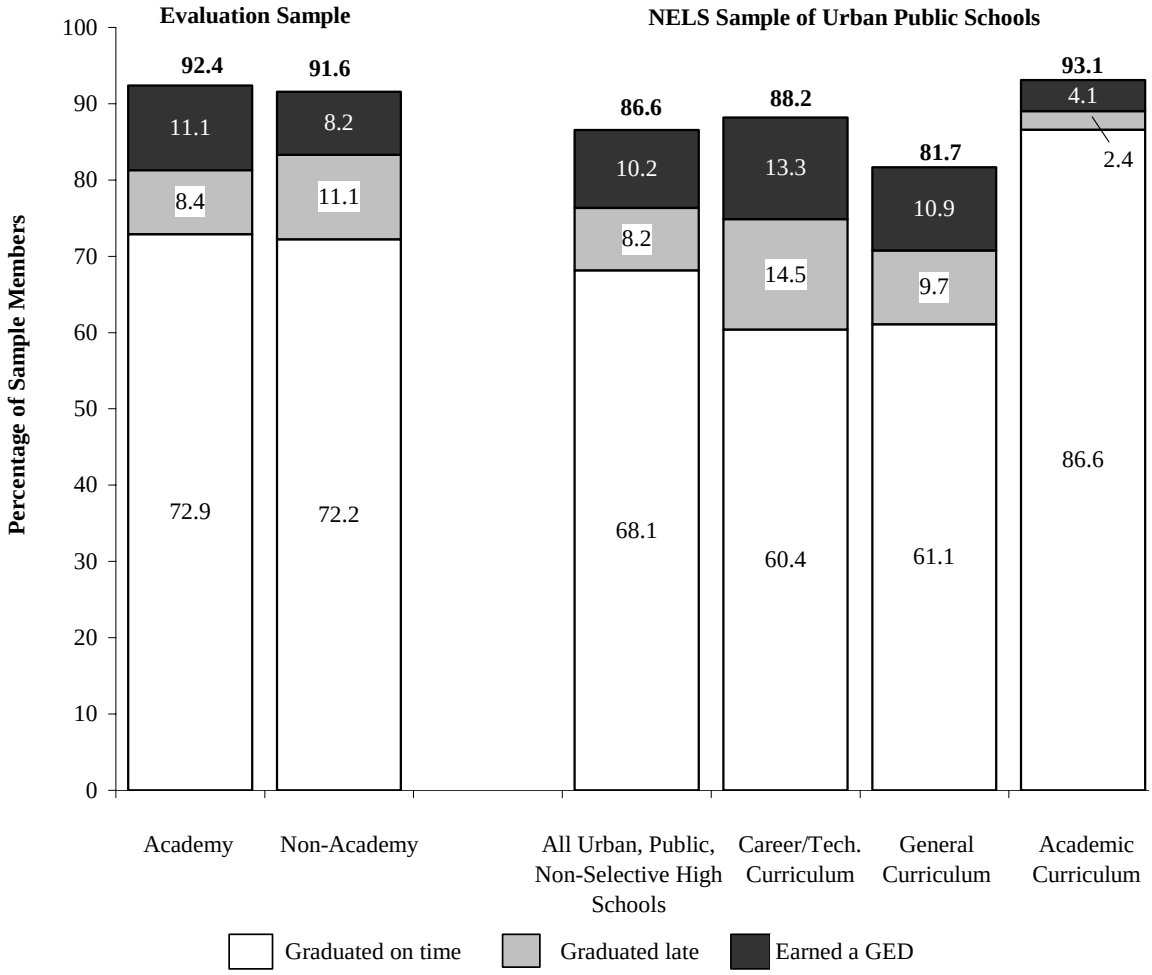
may be less accurate when applied to smaller subgroups. Given that the sample sizes for the curriculum subgroups within urban, public, nonselective schools were well under 1,000 students each, one should be somewhat more skeptical of the individual estimates for these groups.

Exhibits 2.1 and 2.2 present the unadjusted NELS estimates of high school completion and post-secondary attainment rates, respectively. Exhibits 2.3 and 2.4 present the NELS estimates after they were adjusted to account for the distribution of characteristics represented in the Career Academies Evaluation sample as discussed above.

Career Academies Evaluation

Exhibit 2.1

Unadjusted High School Completion Rates Four Years After High School for the Evaluation Sample and the NELS Sample



SOURCE: MDRC calculations from the Career Academies Evaluation Post-High School Follow-Up Survey Database and the National Education Longitudinal Study (NELS), 1988-2000 public-use data files.

NOTES: All measures reflect completion status forty-eight months following scheduled high school graduation.

Students were considered on-time graduates if they received their diploma by the end of June in the year they were scheduled to graduate.

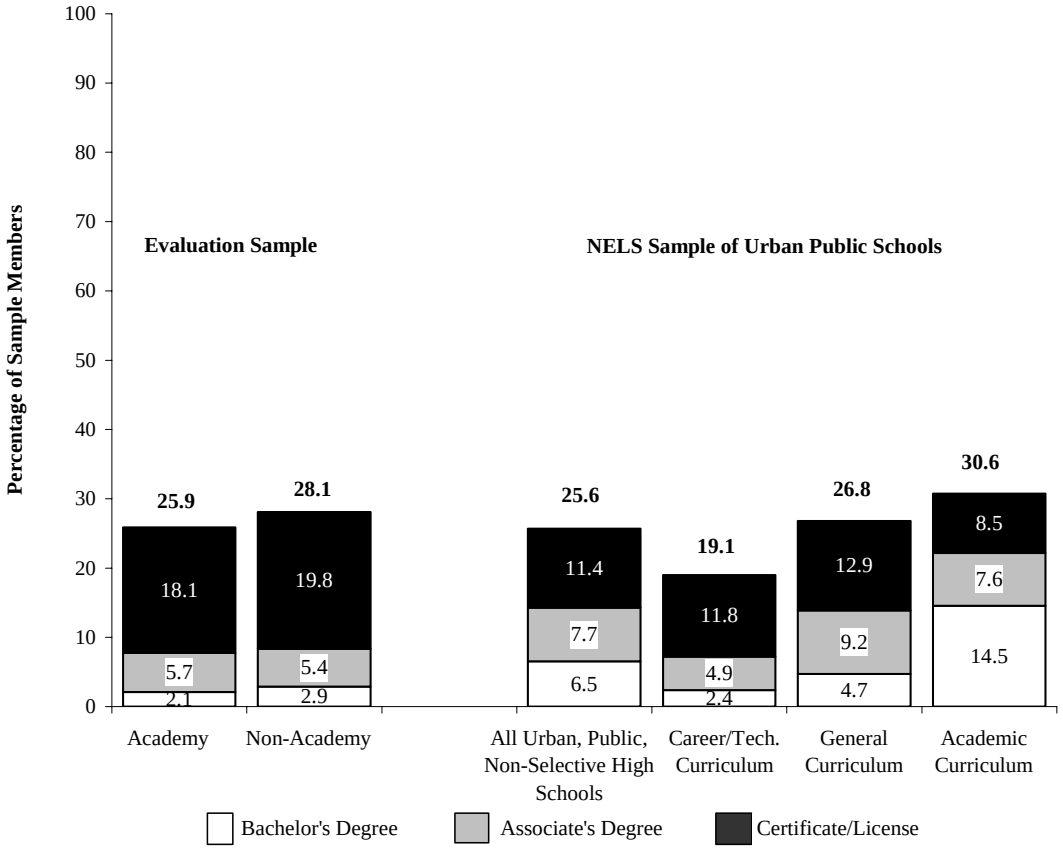
Estimates for all urban, public, non-selective high schools includes some students who either did not report a specific high school curriculum or reported a type of curriculum other than the three shown.

The NELS estimates incorporate weights that account for nonresponse and project to the population of students who were enrolled in 10th grade in 1990. These estimates may be less accurate for smaller subgroups, such as the curriculum subgroups within urban, public schools. No tests of statistical significance were performed.

Career Academies Evaluation

Exhibit 2.2

Unadjusted Degree Completion Rates Four Years After High School for the Evaluation Sample and the NELS Sample



SOURCE: MDRC calculations from the Career Academies Evaluation Post-High School Follow-Up Survey Database and the National Education Longitudinal Study (NELS), 1988-2000 public-use data files.

NOTES: All measures reflect completion status forty-eight months following scheduled high school graduation.

Only students who graduated from high school or earned a GED were given credit for completing post-secondary degrees.

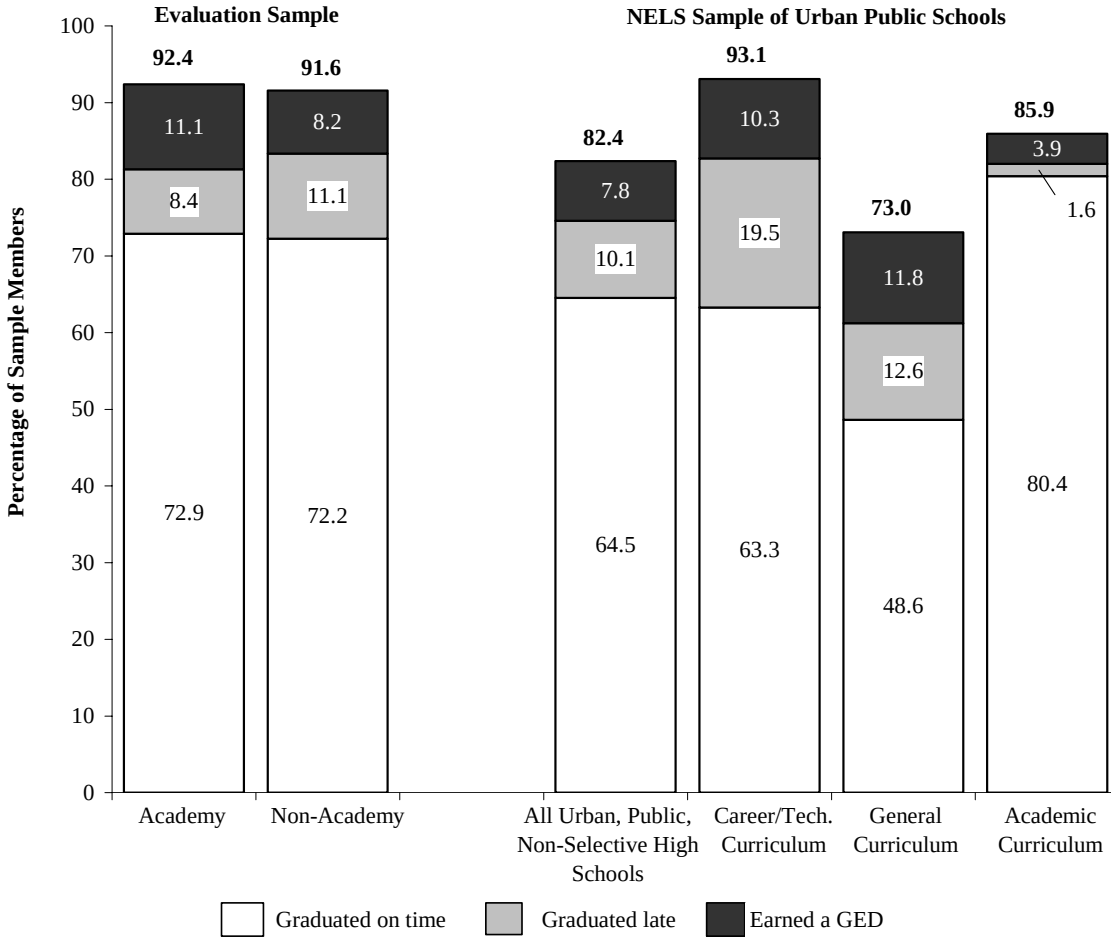
Estimates for all urban, public, non-selective high schools includes some students who either did not report a specific high school curriculm or reported a type of curriculum other than the three shown.

The NELS estimates incorporate weights that account for nonresponse and project to the population of students who were enrolled in 10th grade in 1990. These estimates may be less accurate for smaller subgroups, such as the curriculum subgroups within urban, public schools. No tests of statistical significance were performed.

Career Academies Evaluation

Exhibit 2.3

Adjusted High School Completion Rates Four Years After High School for the Evaluation Sample and the NELS Sample



SOURCE: MDRC calculations from the Career Academies Evaluation Post-High School Follow-Up Survey Database and the National Education Longitudinal Study (NELS), 1988-2000 public-use data files.

NOTES: All measures reflect completion status forty-eight months following scheduled high school graduation.

Students were considered on-time graduates if they received their diploma by the end of June in the year they were scheduled to graduate.

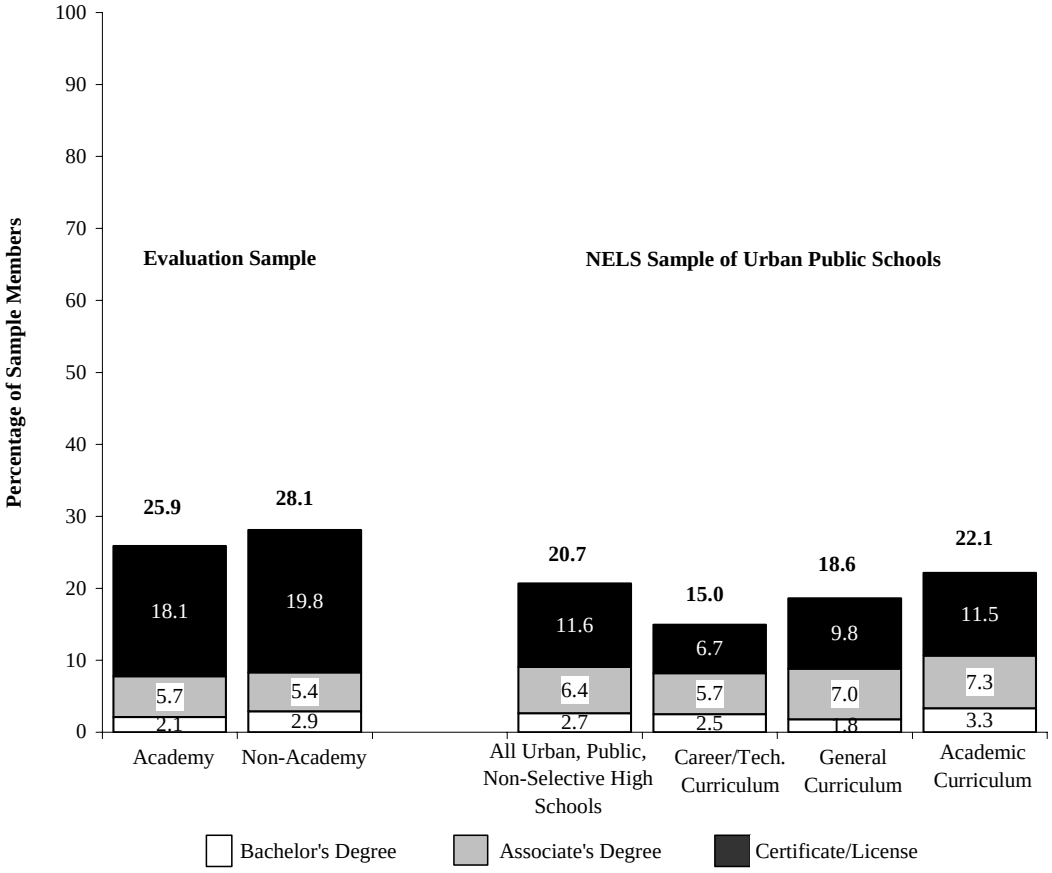
Estimates for all urban, public, non-selective high schools includes some students who either did not report a specific high school curriculm or reported a type of curriculum other than the three shown.

The NELS estimates incorporate weights that account for nonresponse and project to the population of students who were enrolled in 10th grade in 1990. These estimates may be less accurate for smaller subgroups, such as the curriculum subgroups within urban, public schools. In addition, the NELS estimates are adjusted to reflect a sample of students with the same distribution of background characteristics as the non-Academy evaluation sample. No tests of statistical significance were performed.

Career Academies Evaluation

Exhibit 2.4

Adjusted Degree Completion Rates Four Years After High School for the Evaluation Sample and the NELS Sample



SOURCES: MDRC calculations from the Career Academies Evaluation Post-High School Follow-Up Survey Database and the National Education Longitudinal Study (NELS), 1988-2000 public-use data files.

NOTES: All measures reflect completion status 48 months following scheduled high school graduation.

Only students who graduated from high school or earned a GED were given credit for completing post-secondary degrees.

Estimates for all urban, public, non-selective high schools include some students who either did not report a specific high school curriculum or reported a type of curriculum other than the three shown.

The NELS estimates incorporate weights that account for nonresponse and project to the population of students who were enrolled in 10th grade in 1990. These estimates may be less accurate for smaller subgroups, such as the curriculum subgroups within urban, public schools. In addition, the NELS estimates were adjusted to reflect a sample of students with the same distribution of background characteristics as the Non-Academy evaluation sample. No tests of statistical significance were performed.

Unit 3

Impacts for the Full Study Sample

Exhibit 3.1

Year-by-Year Impacts on Employment and Earnings for the Full Study Sample

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Years 1-4					
Ever employed (%)	98.6	97.1	1.5 *	1.6	*1.9*
Ever employed full-time[1] (%)	95.2	92.5	2.7 **	2.9	*3.4*
Months employed	36.6	35.3	1.3 *	3.7	*1.6*
Months employed full-time	29.5	27.5	2.0 **	7.4	*2.5*
Average monthly earnings ($)	1,145.59	1,038.66	106.94 **	10.3	*132.78*
Average weekly hours worked	30.0	28.1	1.9 **	6.6	*2.3*
Average hourly wage ($)	9.19	8.72	0.47 **	5.4	*0.58*
Total number of jobs held	3.1	3.1	0.0	0.8	*0.0*
Average job duration, in months	16.1	15.8	0.3	1.9	*0.4*
Year 1					
Ever employed (%)	85.2	82.5	2.7	3.3	*3.4*
Ever employed full-time[1] (%)	69.2	66.2	3.0	4.6	*3.8*
Months employed	8.0	7.6	0.4	5.3	*0.5*
Months employed full-time	5.9	5.6	0.3	6.1	*0.4*
Average monthly earnings ($)	806.67	724.65	82.02 **	11.3	*101.84*
Average weekly hours worked	24.8	23.1	1.7 *	7.3	*2.1*
Average hourly wage ($)	6.78	6.27	0.51 **	8.2	*0.63*
Year 2					
Ever employed (%)	90.7	90.0	0.8	0.9	*1.0*
Ever employed full-time[1] (%)	77.8	75.7	2.0	2.7	*2.5*
Months employed	9.3	9.0	0.3	3.1	*0.3*
Months employed full-time	7.3	6.9	0.4	6.4	*0.5*
Average monthly earnings ($)	1,077.36	981.45	95.91 **	9.8	*119.08*
Average weekly hours worked	30.2	28.5	1.7 *	5.9	*2.1*
Average hourly wage ($)	7.90	7.74	0.16	2.0	*0.20*
Year 3					
Ever employed (%)	93.3	89.9	3.4 **	3.8	*4.2*
Ever employed full-time[1] (%)	83.0	78.2	4.8 **	6.2	*6.0*
Months employed	9.5	9.3	0.3	2.9	*0.3*
Months employed full-time	8.0	7.3	0.6 **	8.5	*0.8*
Average monthly earnings ($)	1,254.86	1,149.61	105.25 *	9.2	*130.68*
Average weekly hours worked	32.1	30.2	1.9 *	6.4	*2.4*
Average hourly wage ($)	8.93	8.36	0.57 **	6.8	*0.71*
Sample size (N=1,458)	799	659			

(continued)

Exhibit 3.1 (continued)

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Year 4					
Ever employed (%)	91.8	90.8	1.1	1.2	*1.3*
Ever employed full-time[1] (%)	83.8	79.5	4.3 **	5.4	*5.3*
Months employed	9.8	9.4	0.4	3.7	*0.4*
Months employed full-time	8.3	7.7	0.6 **	8.1	*0.8*
Average monthly earnings ($)	1,439.43	1,298.02	141.41 **	10.9	*175.58*
Average weekly hours worked	32.9	30.7	2.1 **	6.9	*2.6*
Average hourly wage ($)	9.85	9.39	0.45 *	4.8	*0.56*
Last Quarter					
Ever employed (%)	85.0	82.2	2.9	3.5	*3.5*
Ever employed full-time[1] (%)	73.9	69.3	4.6 *	6.7	*5.7*
Months employed	2.4	2.4	0.1	2.1	*0.1*
Months employed full-time	2.1	2.0	0.1	6.1	*0.1*
Average monthly earnings ($)	1,488.49	1,381.92	106.57 *	7.7	*132.32*
Average weekly hours worked	32.7	31.2	1.5	4.8	*1.9*
Average hourly wage ($)	9.60	9.03	0.57 *	6.3	*0.71*
Sample size (N=1,458)	799	659			

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students. See Exhibit 3.6 for the percentage of the Academy and the non-Academy group ever enrolled in a Career Academy.

Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

Respondents reported their ending or most recent wages and hours worked for each job. This rate was assumed to apply to the entire duration of the job. Thus, if wages or hours were lower at the beginning of each job, these measures may overestimate true average wages and earnings.

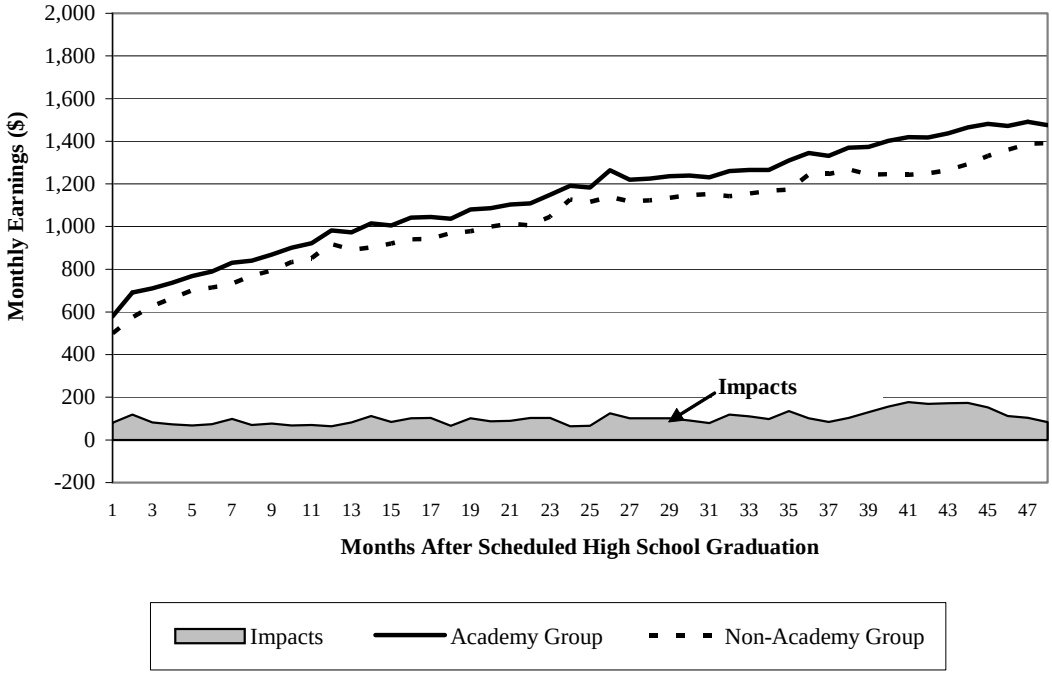
For respondents who were never employed during a given month, earnings, hours, and wages are included in these averages as zeros.

[1]Students were considered employed full-time if they reported working 30 or more hours per week.

Career Academies Evaluation

Exhibit 3.2

Month-by-Month Impacts on Total Monthly Earnings for the Full Study Sample



SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Differences in monthly earnings are significant at the .10 level or lower in 37 out of the 48 months studied.

Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

Respondents reported their ending wage at each job, and this rate was assumed to apply to the entire duration of the job. Thus, if wages or hours were lower at the beginning of each job, these measures may overestimate true average earnings.

For respondents who were never employed during a given month, earnings are included in these averages as zeros.

Career Academies Evaluation

Exhibit 3.3

Impacts on the Distribution of Earnings, Hours Worked, and Wages for the Full Study Sample

Outcome (%)	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Average monthly earnings					
$0 - $824	35.1	38.3	-3.2	-8.3	*-3.9*
$825 - $1,237	25.7	28.8	-3.1	-10.8	*-3.9*
$1,238 - $1,442	11.5	8.6	2.9 *	33.5	*3.6*
$1,443 - $1,648	7.7	7.3	0.4	5.2	*0.5*
$1,649 or more	18.8	14.2	4.6 **	32.4	*5.7*
Average weekly hours worked					
0 - 10	7.9	8.4	-0.5	-5.4	*-0.6*
10 - 25	26.2	28.1	-1.9	-6.8	*-2.4*
26 - 35	27.2	29.9	-2.7	-9.0	*-3.3*
36 - 45	27.4	23.7	3.7	15.5	*4.6*
46 or more	10.1	7.1	3.0 *	42.7	*3.8*
Average hourly wage[1]					
$0 - $5.15 (MW)	2.7	2.1	0.6	30.5	*0.8*
$5.16 - $7.73 (1.5xMW)	32.0	32.8	-0.8	-2.3	*-1.0*
$7.74 - $9.01 (1.75xMW)	22.5	24.9	-2.3	-9.4	*-2.9*
$9.02 - $10.30 (2.0xMW)	15.1	16.0	-1.0	-6.0	*-1.2*
$10.31 or more	26.4	21.5	5.0 **	23.2	*6.2*
Sample size (N=1,458)	799	659			

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using ordinary least squares, controlling for background characteristics. Rounding may cause slight discrepancies in calculating differences and sums. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students.

For respondents who were never employed during a given month, earnings, hours, and wages are included in these distributions as zeros.

Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

Respondents reported their ending or most recent wages and hours worked for each job. This rate was assumed to apply to the entire duration of the job. Thus, if wages or hours were lower at the beginning of each job, these measures may overestimate true average wages and earnings.

[1]The upper end of the categories of average hourly wage was set as a multiple of the minimum wage (MW), which from 1997-2003 was $5.15 per hour.

Career Academies Evaluation

Exhibit 3.4

Components of the Impact on Average Monthly Earnings for the Full Study Sample

Outcome	Academy Group	Non-Academy Group	Difference
Average monthly earnings ($)	1,145.59	1,038.66	106.94
Ever employed (%)	98.61	97.11	1.50
Months employed, for those ever employed	37.08	36.35	0.73
Average monthly earnings during months employed, for those who were ever employed ($)	1,443.35	1,372.19	71.16
Average weekly hours during months employed, for those who were ever employed	38.65	37.93	0.72
Average hourly wage during months employed, for those who were ever employed ($)	9.28	8.96	0.32

Proportion of the Impact on Average Monthly Earnings Due to Each Component

Components of average monthly earnings impact	$	(%)	$
Impact due to an increase in percentage ever employed	15.59	14.07	15.04
Impact due to increase in months worked, for those ever employed	20.87	18.83	20.14
Impact due to increase in hours worked while working, for those ever employed	25.80	23.29	24.90
Impact due to an increase in hourly wage	48.55	43.81	46.85
Total impact[1]	110.81	100.00	106.94

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: These calculations assume that all components of earnings are independent. This method examined each measure in isolation and calculated how the impact on that measure would change average monthly earnings, if all other components of earnings were held constant. For example, to calculate the impact due solely to the increase in wages, the impact on wages ($0.32 per hour) was multiplied by the number of hours that the control group worked in each month (37.9 hours per week times 4 weeks per month).

[1]Interactions among wages, hours worked, and months worked were not accounted for; therefore, these calculations are not exact. For comparison with the actual impact of $106.94 per month, the components were also expressed as a percentage of the earnings impact. Finally, these percentages were applied to the actual impact to attain the numbers in the rightmost column.

Exhibit 3.5

Differences in Characteristics of the Most Recent Job Held for Those Who Were Employed in the Last Quarter for the Full Study Sample

Outcome	Academy Group	Non-Academy Group	Difference	
Job duration in months	*18.0*	*17.9*	*0.2*	
Month last worked (relative)	*46.2*	*46.1*	*0.1*	
Managerial/supervisory position (%)	*8.6*	*7.2*	*1.4*	
Occupational group (%) [1]				
Management/professional	*24.7*	*23.3*	*1.4*	
Food service and personal service	*10.7*	*9.9*	*0.8*	
Sales and related	*15.7*	*14.0*	*1.7*	
Office and administrative support	*29.8*	*33.1*	*-3.3*	
Construction, production, repair, military	*18.8*	*19.5*	*-0.7*	
Average monthly earnings [2] *($)*	*1,529.99*	*1,455.91*	*74.08*	*
At start of job	*1,385.54*	*1,315.21*	*70.34*	
At end of job	*1,706.85*	*1,633.07*	*73.78*	
Difference	*321.55*	*318.54*	*3.01*	
Average hours per week	*37.0*	*36.1*	*0.9*	
At start of job	*35.9*	*35.3*	*0.6*	
At end of job	*38.5*	*37.4*	*1.1*	*
Difference	*2.6*	*2.1*	*0.5*	
Average hourly wage ($)	*10.32*	*9.96*	*0.36*	
At start of job	*9.68*	*9.26*	*0.43*	
At end of job	*11.04*	*10.82*	*0.23*	
Difference	*1.35*	*1.56*	*-0.21*	
Job offers full benefits [3] *(%)*	*43.3*	*40.6*	*2.7*	
Health plan	*59.8*	*59.8*	*0.0*	
Sick leave	*57.8*	*54.4*	*3.4*	
Paid vacation days	*59.0*	*56.4*	*2.6*	
Retirement plan	*46.2*	*44.7*	*1.5*	
Uses/used a computer at this job (%)	*71.6*	*68.8*	*2.8*	
Often/always performed physically demanding tasks	*27.4*	*29.7*	*-2.3*	
Very satisfied at job (%)	*48.6*	*46.2*	*2.4*	
Very likely to be promoted in the next year [4] *(%)*	*43.7*	*36.8*	*6.9*	**
Job is/was directly related to high school (%)	*27.3*	*21.9*	*5.4*	**
Sample size (N=1,423)	786	637		

(continued)

Exhibit 3.5 (continued)

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: All measures apply to jobs held in the last three months of the 48-month follow-up period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using ordinary least squares, controlling for background characteristics. Rounding may cause slight discrepancies in calculating differences and sums. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Measures are italicized because they refer only to those students who were employed during the last three months of the follow-up period, and thus do not represent a direct experimental comparison of Academy and non-Academy students.

[1]Occupational groups are based on the U.S. Department of Labor's Standard Occupational Classification (SOC) system.

[2]Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

[3]Full benefits include health plan, sick leave, paid vacation days, and retirement plan.

[4]Likelihood of being promoted was only asked of those who were employed at the time of the interview (n=1,224).

Career Academies Evaluation

Exhibit 3.6

Impacts on Educational Attainment for the Full Study Sample

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Ever enrolled in a Career Academy during high school (%)	86.8	6.3	80.5 ***	--	--
Was enrolled in a Career Academy at the end of scheduled grade 12 (%)	53.1	4.1	49.0 ***	--	--
High school completion status (%)					
Earned high school diploma or GED	92.3	91.5	0.8	0.9	*1.0*
Earned high school diploma	81.3	83.3	-2.0	-2.4	*-2.5*
On-time graduate[1]	72.9	72.2	0.7	0.9	*0.8*
Late graduate	8.4	11.1	-2.7 *	-24.3	*-3.3*
Earned a GED	11.1	8.2	2.9 *	34.7	*3.6*
Post-secondary education enrollment[2] (%)					
Ever enrolled in post-secondary education	79.0	80.1	-1.1	-1.3	*-1.3*
Highest post-secondary education enrollment					
Four-year college	25.8	25.1	0.7	2.9	*0.9*
Two-year college	38.1	37.7	0.4	1.0	*0.5*
Skills training, technical or trade school	15.3	17.3	-2.0	-11.6	*-2.5*
Months enrolled in post-secondary education	21.3	21.7	-0.3	-1.6	*-0.4*
Highest credential completed or in progress[3] (%)					
Any post-secondary credential	55.5	56.7	-1.2	-2.0	*-1.4*
Completed	26.0	28.2	-2.2	-7.7	*-2.7*
In progress	29.6	28.5	1.1	3.8	*1.4*
Bachelor's degree	16.3	17.5	-1.1	-6.5	*-1.4*
Completed	2.1	2.9	-0.8	-26.9	*-1.0*
In progress	14.2	14.6	-0.4	-2.4	*-0.4*
Associate's degree	18.7	17.1	1.7	9.7	*2.1*
Completed	5.7	5.4	0.2	4.4	*0.3*
In progress	13.0	11.6	1.4	12.1	*1.8*
Skills training certificate or license	20.5	22.2	-1.7	-7.5	*-2.1*
Completed	18.1	19.8	-1.7	-8.5	*-2.1*
In progress	2.5	2.4	0.1	2.3	*0.1*
Years of schooling completed[4]	12.6	12.7	0.0	-0.2	*0.0*
Sample size (N=1,458)	799	659			

(continued)

Exhibit 3.6 (continued)

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Unless otherwise indicated, statuses reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating sums and differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students.

[1]Students were considered on-time graduates if they graduated in June or earlier of the year they were scheduled to graduate.

[2]Students must have earned a high school diploma or GED to be considered enrolled in a post-secondary education program.

[3]A credential was considered "in progress" if the student reported attempting it in a program that he/she was currently attending (within three months of the end of the follow-up period) and expected to complete.

[4]Years of school completed was calculated by assigning 12 years to a completed high school diploma or GED, 14 years to an associate's or 16 years to a completed bachelor's degree. For those who did not complete an associate's or a bachelor's degree, years of school completed was calculated as 12 plus the percentage of the degree completed through the end of the follow-up period. For those who did not complete a high school diploma or a GED, years of school completed was calculated as a percentage of the 12 years given for a completed high school diploma or a GED.

Exhibit 3.7

Characteristics of the Most Recent Educational Program Attended for Those Who Ever Enrolled in Any Program

Outcome	Academy Group	Non-Academy Group	Difference
Duration of attendance in months	*20.3*	*21.4*	*-1.1*
Month of last attendance (relative to scheduled high school graduation)	*37.2*	*37.8*	*-0.6*
Hours per week in class	*19.2*	*18.4*	*0.8*
School considered student full-time (%)	*69.7*	*66.3*	*3.4*
Took basic reading/math class (%)	*36.3*	*32.9*	*3.5*
Credential earned or attempted (%)			
Bachelor's degree	*24.4*	*25.6*	*-1.2*
Associate's degree	*36.2*	*35.5*	*0.8*
Certificate or license	*24.4*	*25.6*	*-1.2*
High school diploma or GED	*4.7*	*4.0*	*0.6*
No credential	*10.5*	*9.2*	*1.3*
Financial resources[1] (%)			
Bank or government loans	*21.6*	*22.5*	*-0.9*
Scholarships and grants	*42.7*	*42.7*	*0.0*
Work-study programs	*2.6*	*2.8*	*-0.2*
Personal savings	*11.2*	*10.2*	*1.1*
Family	*13.5*	*14.7*	*-1.2*
Employment while attending school	*42.3*	*39.0*	*3.3*
Financial aid from employer	*7.3*	*7.0*	*0.3*
Completed program (%)	*27.5*	*30.6*	*-3.0*
Still enrolled (%)	*41.9*	*39.6*	*2.2*
Left program without completing it (%)	*30.6*	*29.8*	*0.8*
Primary reason for leaving, for those who left[2] (%)			
School-related reason	*12.7*	*11.9*	*0.8*
Personal reason	*30.2*	*27.9*	*2.3*
Financial/employment reason	*47.6*	*48.0*	*-0.4*
Other reason	*9.4*	*12.2*	*-2.8*
Sample size (N=1,208)	659	549	

(continued)

Exhibit 3.7 (continued)

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

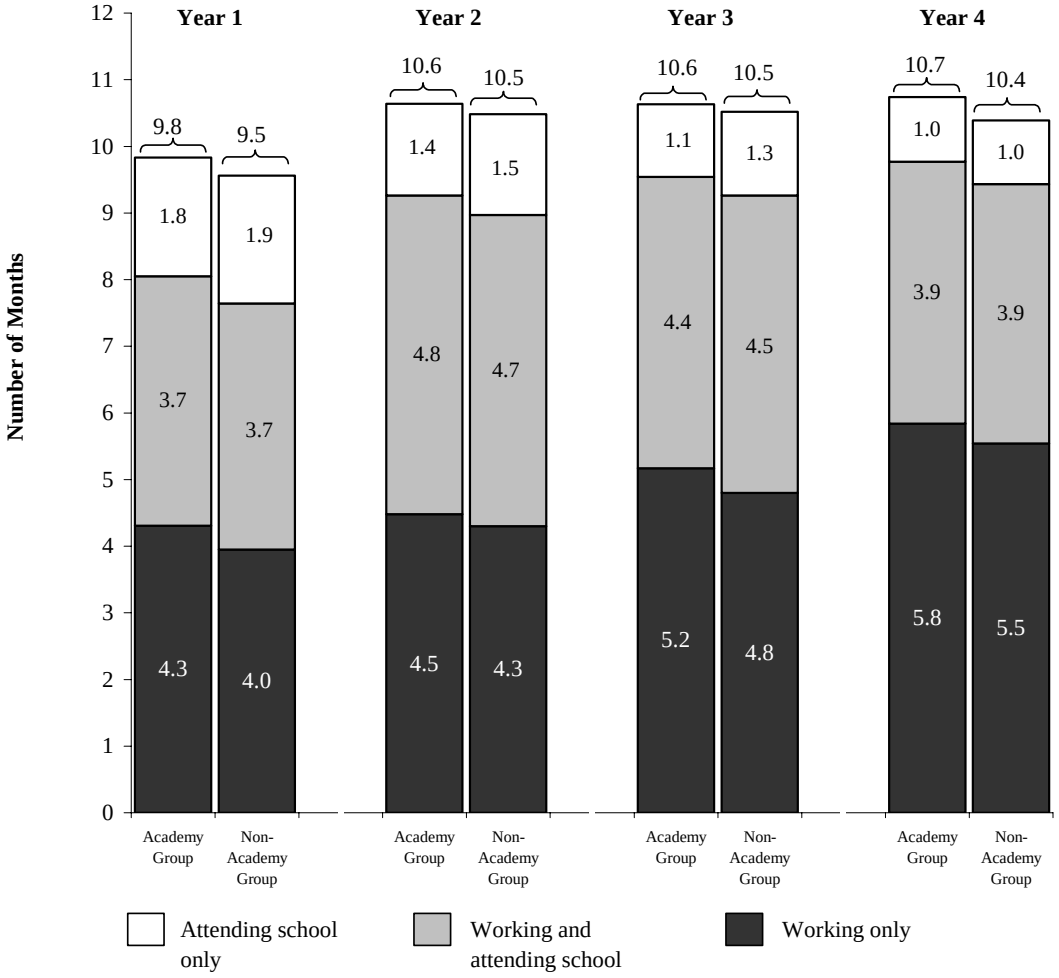
NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using ordinary least squares, controlling for background characteristics. Rounding may cause slight discrepancies in calculating differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Measures are italicized because they refer only to those students who ever attended a post-secondary education program, and thus do not represent a direct experimental comparison of Academy and non-Academy students.

[1]Individuals were asked how the education programs they attended were financed. Because the categories they reported are not mutually exclusive, these percentages do not add up to 100 percent.

[2]Only students who left the program without completing it were asked about their reason for leaving (n=364).

Exhibit 3.8
Year-by-Year Impacts on Months Spent Attending School or Working for the Full Study Sample



SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: All measures reflect the average number of months spent in each status during each year of the 48-month follow-up period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating sums and differences.

A two-tailed t-test was applied to differences between the Academy and non-Academy groups. The difference between total months in any activity in year 4 was significant at .1 or lower.

Exhibit 3.9

Impacts on Family Formation, Public Assistance, and Behaviors for the Full Study Sample

Outcome (%)	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Is a parent	36.8	35.2	1.7	4.8	*2.1*
Is a custodial single parent	19.0	17.3	1.8	10.2	*2.2*
Marital Status					
Married	19.8	19.3	0.5	2.5	*0.6*
Single	77.0	78.3	-1.3	-1.6	*-1.6*
Divorced, separated, or widowed	3.2	2.3	0.8	35.2	*1.0*
Lives with parent(s) or guardian(s)	48.2	52.3	-4.1	-7.8	*-5.0*
Ever gone without health insurance in past year	27.1	31.3	-4.2 *	-13.3	*-5.2*
Received TANF or cash assistance in past year	7.2	5.9	1.3	22.0	*1.6*
Received food stamps in the past year	9.8	8.0	1.8	22.2	*2.2*
Registered to vote	66.3	64.7	1.6	2.5	*2.0*
Any recent illegal or drug-related activity[1]	6.7	6.2	0.6	9.1	*0.7*
Sample size (N=1,458)	799	659			

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Unless otherwise indicated, statuses were reported for the end of a 48-month period ending in June of 2000, 2002, or 2002: the fourth year following scheduled high school graduation. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students. See Exhibit 3.6.

[1]This measure includes illegal drug use in the past 2 weeks, breaking the law (other than traffic violations) in the past 2 weeks, current gang membership, and any arrests or convictions in the past year.

Unit 4

Impacts for Gender Subgroups

Career Academies Evaluation

Exhibit 4.1-YM

Year-by-Year Impacts on Employment and Earnings for Young Men

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Years 1-4					
Ever employed (%)	99.5	96.2	3.4 ***	3.5	*4.0*
Ever employed full-time[1] (%)	96.8	92.1	4.7 **	5.2	*5.7*
Months employed	38.8	36.0	2.8 **	7.9	*3.4*
Months employed full-time	32.8	28.4	4.4 ***	15.5	*5.3*
Average monthly earnings ($)	1,373.00	1,161.07	211.93 **	18.3	*254.05*
Average weekly hours worked	34.2	30.0	4.2 ***	14.0	*5.0*
Average hourly wage ($)	9.75	9.01	0.74 **	8.2	*0.89*
Total number of jobs held	3.2	3.2	0.0	1.1	*0.0*
Average job duration, in months	16.9	16.1	0.9	5.3	*1.0*
Year 1					
Ever employed (%)	88.6	84.0	4.6	5.5	*5.5*
Ever employed full-time[1] (%)	77.2	68.7	8.5 **	12.4	*10.2*
Months employed	8.6	7.8	0.8 **	10.2	*1.0*
Months employed full-time	6.9	5.8	1.1 **	19.8	*1.4*
Average monthly earnings ($)	995.77	789.86	205.91 ***	26.1	*246.84*
Average weekly hours worked	28.7	24.5	4.2 **	17.0	*5.0*
Average hourly wage ($)	7.50	6.64	0.87 **	13.1	*1.04*
Year 2					
Ever employed (%)	93.9	89.5	4.4 *	4.9	*5.3*
Ever employed full-time[1] (%)	82.8	76.4	6.4 *	8.4	*7.7*
Months employed	10.0	9.1	0.9 **	9.9	*1.1*
Months employed full-time	8.3	7.1	1.2 ***	16.4	*1.4*
Average monthly earnings ($)	1,294.36	1,092.53	201.83 **	18.5	*241.94*
Average weekly hours worked	34.7	30.4	4.3 **	14.1	*5.1*
Average hourly wage ($)	8.62	8.23	0.39	4.8	*0.47*
Year 3					
Ever employed (%)	96.8	90.3	6.6 ***	7.3	*7.9*
Ever employed full-time[1] (%)	87.5	75.7	11.8 ***	15.6	*14.1*
Months employed	10.0	9.6	0.4	4.5	*0.5*
Months employed full-time	8.6	7.7	0.9 **	11.3	*1.0*
Average monthly earnings ($)	1,488.36	1,322.22	166.13	12.6	*199.15*
Average weekly hours worked	36.4	32.6	3.8 **	11.5	*4.5*
Average hourly wage ($)	9.65	8.85	0.80 **	9.1	*0.96*
Sample size (N=604)	331	273			

(continued)

Exhibit 4.1-YM (continued)

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Year 4					
Ever employed (%)	93.9	90.3	3.6	3.9	*4.3*
Ever employed full-time[1] (%)	87.3	80.5	6.8 **	8.4	*8.1*
Months employed	10.1	9.5	0.7 **	7.0	*0.8*
Months employed full-time	9.0	7.8	1.2 ***	15.3	*1.4*
Average monthly earnings ($)	1,718.55	1,450.48	268.08 **	18.5	*321.36*
Average weekly hours worked	37.1	32.5	4.6 **	14.1	*5.5*
Average hourly wage ($)	10.72	9.93	0.78	7.9	*0.94*
Last Quarter					
Ever employed (%)	87.5	84.3	3.3	3.9	*3.9*
Ever employed full-time[1] (%)	78.7	71.3	7.4 **	10.4	*8.9*
Months employed	2.5	2.5	0.1	3.3	*0.1*
Months employed full-time	2.3	2.0	0.2 **	10.9	*0.3*
Average monthly earnings ($)	1,782.16	1,567.09	215.07 *	13.7	*257.82*
Average weekly hours worked	37.0	33.3	3.7 **	11.2	*4.5*
Average hourly wage ($)	10.53	9.84	0.68	7.0	*0.82*
Sample size (N=604)	331	273			

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students. See Exhibit 3.6 for the percentage of the Academy and the non-Academy group ever enrolled in a Career Academy.

Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

Respondents reported their ending or most recent wages and hours worked for each job. This rate was assumed to apply to the entire duration of the job. Thus, if wages or hours were lower at the beginning of each job, these measures may overestimate true average wages and earnings.

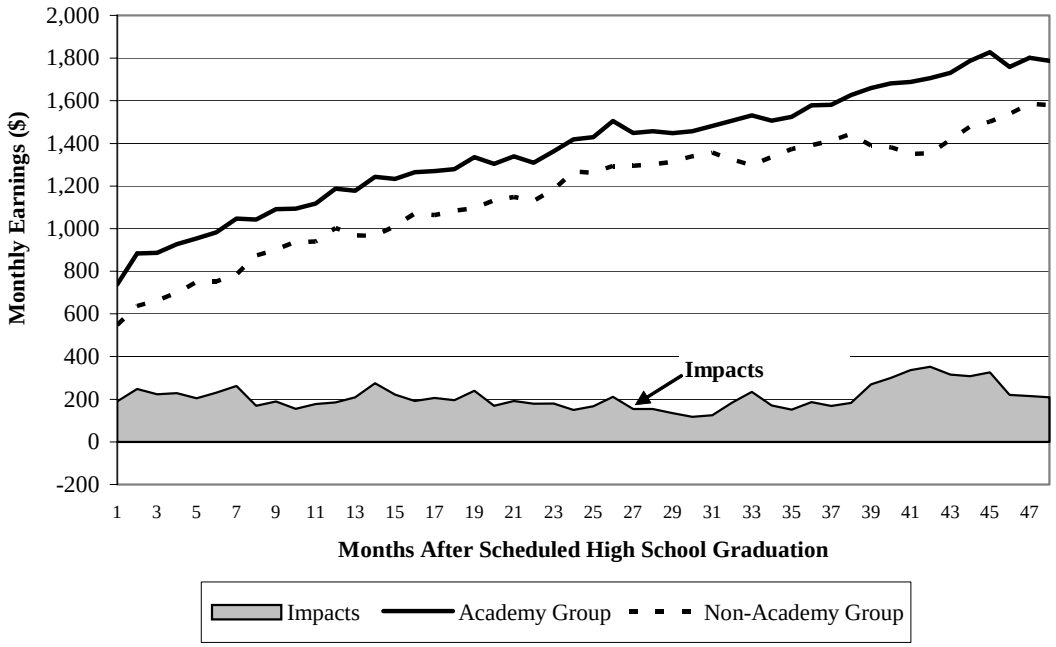
For respondents who were never employed during a given month, earnings, hours, and wages are included in these averages as zeros.

[1]Students were considered employed full-time if they reported working 30 or more hours per week.

Career Academies Evaluation

Exhibit 4.2-YM

Month-by-Month Impacts on Total Monthly Earnings for Young Men



SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Differences in monthly earnings are significant at the .10 level or lower in 37 out of the 48 months studied.

Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

Respondents reported their ending wage at each job, and this rate was assumed to apply to the entire duration of the job. Thus, if wages or hours were lower at the beginning of each job, these measures may overestimate true average earnings.

For respondents who were never employed during a given month, earnings are included in these averages as zeros.

Career Academies Evaluation

Exhibit 4.3-YM

Impacts on the Distribution of Earnings, Hours Worked, and Wages for the Young Men

Outcome (%)	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Average monthly earnings					
$0 - $824	25.7	32.1	-6.4 *	-19.9	*-7.7*
$825 - $1,237	24.8	25.1	-0.3	-1.2	*-0.4*
$1,238 - $1,442	13.4	8.6	4.8 *	55.8	*5.8*
$1,443 - $1,648	9.0	7.8	1.2	15.1	*1.4*
$1,649 or more	26.5	22.5	4.0	17.9	*4.8*
Average weekly hours worked					
0 - 10	6.4	8.1	-1.7	-20.6	*-2.0*
10 - 25	18.9	22.9	-4.1	-17.7	*-4.9*
26 - 35	24.9	27.4	-2.5	-9.2	*-3.0*
36 - 45	33.0	25.7	7.3 *	28.4	*8.8*
46 or more	16.1	12.1	4.0	33.2	*4.8*
Average hourly wage[1]					
$0 - $5.15 (MW)	3.3	2.6	0.7	27.5	*0.9*
$5.16 - $7.73 (1.5xMW)	24.2	28.4	-4.2	-14.8	*-5.0*
$7.74 - $9.01 (1.75xMW)	22.5	18.5	4.0	21.7	*4.8*
$9.02 - $10.30 (2.0xMW)	16.1	17.7	-1.6	-8.7	*-1.9*
$10.31 or more	32.9	28.5	4.5	15.7	*5.3*
Sample size (N=604)	331	273			

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using ordinary least squares, controlling for background characteristics. Rounding may cause slight discrepancies in calculating differences and sums. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students.

For respondents who were never employed during a given month, earnings, hours, and wages are included in these distributions as zeros.

Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

Respondents reported their ending or most recent wages and hours worked for each job. This rate was assumed to apply to the entire duration of the job. Thus, if wages or hours were lower at the beginning of each job, these measures may overestimate true average wages and earnings.

[1]The upper end of the categories of average hourly wage was set as a multiple of the minimum wage (MW), which from 1997-2003 was $5.15 per hour.

Career Academies Evaluation

Exhibit 4.4-YM

Components of the Impact on Average Monthly Earnings for Young Men

Outcome	Academy Group	Non-Academy Group	Difference
Average monthly earnings ($)	1,373.00	1,161.07	211.93
Ever employed (%)	99.52	96.17	3.35
Months employed, for those ever employed	38.94	37.41	1.53
Average monthly earnings during months employed, for those who were ever employed ($)	1,641.67	1,485.54	156.13
Average weekly hours during months employed, for those who were ever employed	41.55	39.37	2.19
Average hourly wage during months employed, for those who were ever employed ($)	9.78	9.37	0.41

Proportion of the Impact on Average Monthly Earnings Due to Each Component

Components of average monthly earnings impact	$	(%)	$
Impact due to an increase in percentage ever employed	38.79	16.66	17.82
Impact due to increase in months worked, for those ever employed	47.35	20.34	21.75
Impact due to increase in hours worked while working, for those ever employed	82.08	35.26	37.71
Impact due to an increase in hourly wage	64.57	27.74	29.66
Total impact[1]	232.79	100.00	106.94

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: These calculations assume that all components of earnings are independent. This method examined each measure in isolation and calculated how the impact on that measure would change average monthly earnings, if all other components of earnings were held constant. For example, to calculate the impact due solely to the increase in wages, the impact on wages ($0.41 per hour) was multiplied by the number of hours that the control group worked in each month (39.4 hours per week times 4 weeks per month).

[1]Interactions among wages, hours worked, and months worked were not accounted for; therefore, these calculations are not exact. For comparison with the actual impact of $211.93 per month, the components were expressed as a percentage of the earnings impact. Finally, these percentages were applied to the actual impact to attain the numbers in the rightmost column.

Career Academies Evaluation

Exhibit 4.5-YM

Differences in Characteristics of the Most Recent Job Held for Those Who Were Employed in the Last Quarter for Young Men

Outcome	Academy Group	Non-Academy Group	Difference	
Job duration in months	*19.7*	*18.3*	*1.4*	
Month last worked (relative)	*46.6*	*46.4*	*0.3*	
Managerial/supervisory position (%)	*11.4*	*8.3*	*3.1*	
Occupational group (%) [1]				
Management/professional	*21.6*	*18.6*	*3.0*	
Food service and personal service	*9.2*	*9.9*	*-0.6*	
Sales and related	*14.1*	*12.4*	*1.8*	
Office and administrative support	*16.6*	*21.4*	*-4.8*	
Construction, production, repair, military	*38.3*	*37.4*	*0.9*	
Average monthly earnings [2] *($)*	*1,706.5*	*1,566.5*	*139.98*	*
At start of job	*1,517.5*	*1,397.2*	*120.26*	
At end of job	*1,944.3*	*1,777.1*	*167.28*	*
Difference	*428.4*	*386.1*	*42.32*	
Average hours per week	*39.5*	*37.2*	*2.3*	**
At start of job	*38.1*	*36.8*	*1.4*	
At end of job	*41.4*	*38.4*	*3.0*	**
Difference	*3.2*	*1.7*	*1.5*	*
Average hourly wage ($)	*10.8*	*10.6*	*0.20*	
At start of job	*9.9*	*9.7*	*0.26*	
At end of job	*11.8*	*11.6*	*0.28*	
Difference	*1.9*	*2.0*	*-0.03*	
Job offers full benefits [3] *(%)*	*47.7*	*39.8*	*7.9*	*
Health plan	*65.3*	*62.3*	*3.1*	
Sick leave	*62.0*	*56.9*	*5.2*	
Paid vacation days	*62.5*	*55.2*	*7.3*	*
Retirement plan	*50.4*	*45.2*	*5.2*	
Uses/used a computer at this job (%)	*65.9*	*59.1*	*6.8*	
Often/always performed physically demanding tasks	*41.6*	*42.8*	*-1.2*	
Very satisfied at job (%)	*49.3*	*43.9*	*5.4*	
Very likely to be promoted in the next year [4] *(%)*	*46.2*	*42.4*	*3.8*	
Job is/was directly related to high school (%)	*25.0*	*18.9*	*6.1*	*
Sample size (N=590)	329	261		

(continued)

Exhibit 4.5-YM (continued)

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: All measures apply to jobs held in the last three months of the 48-month follow-up period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using ordinary least squares, controlling for background characteristics. Rounding may cause slight discrepancies in calculating differences and sums. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Measures are italicized because they refer only to those students who were employed during the last three months of thye follow-up period, and thus do not represent a direct experimental comparison of Academy and non-Academy students.

[1]Occupational groups are based on the U.S. Department of Labor's Standard Occupational Classification (SOC) system.

[2]Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

[3]Full benefits include health plan, sick leave, paid vacation days, and retirement plan.

[4]Likelihood of being promoted was only asked of those who were employed at the time of the interview (n=532).

Career Academies Evaluation

Exhibit 4.6-YM

Impacts on Educational Attainment for Young Men

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Ever enrolled in a Career Academy during high school (%)	87.2	3.8	83.4 ***	--	--
Was enrolled in a Career Academy at the end of scheduled grade 12 (%)	49.4	2.1	47.2 ***	--	--
High school completion status (%)					
Earned high school diploma or GED	92.0	91.9	0.1	0.1	*0.1*
Earned high school diploma	78.8	80.9	-2.1	-2.6	*-2.5*
On-time graduate[1]	70.7	68.4	2.3	3.4	*2.8*
Late graduate	8.2	12.9	-4.7 *	-36.2	*-5.6*
Earned a GED	13.3	10.9	2.4	22.1	*2.9*
Post-secondary education enrollment[2] (%)					
Ever enrolled in post-secondary education	74.9	81.7	-6.8 **	-8.4	*-8.2*
Highest post-secondary education enrollment					
Four-year college	23.8	24.8	-0.9	-3.8	*-1.1*
Two-year college	37.2	38.3	-1.1	-3.0	*-1.4*
Skills training, technical or trade school	13.9	18.8	-4.9	-26.0	*-5.8*
Months enrolled in post-secondary education	20.2	21.4	-1.3	-5.8	*-1.5*
Highest credential completed or in progress[3] (%)					
Any post-secondary credential	54.2	58.5	-4.2	-7.3	*-5.1*
Completed	26.0	31.2	-5.2	-16.6	*-6.2*
In progress	28.3	27.3	1.0	3.5	*1.2*
Bachelor's degree	14.5	16.8	-2.3	-13.8	*-2.8*
Completed	1.5	2.6	-1.1	-42.9	*-1.3*
In progress	13.1	14.3	-1.2	-8.7	*-1.5*
Associate's degree	19.7	18.2	1.5	8.0	*1.8*
Completed	6.0	7.4	-1.4	-18.8	*-1.7*
In progress	13.8	10.8	3.0	27.5	*3.6*
Skills training certificate or license	20.0	23.4	-3.4	-14.5	*-4.1*
Completed	18.5	21.2	-2.7	-12.6	*-3.2*
In progress	1.5	2.2	-0.7	-33.6	*-0.9*
Years of schooling completed[4]	12.6	12.7	-0.1	-0.6	*-0.1*
Sample size (N=604)	331	273			

(continued)

Exhibit 4.6-YM (continued)

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Unless otherwise indicated, statuses reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating sums and differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students.

[1]Students were considered on-time graduates if they graduated in June or earlier of the year they were scheduled to graduate.

[2]Students must have earned a high school diploma or GED to be considered enrolled in a post-secondary education program.

[3]A credential was considered "in progress" if the student reported attempting it in a program that he/she was currently attending (within three months of the end of the follow-up period) and expected to complete.

[4]Years of school completed was calculated by assigning 12 years to a completed high school diploma or GED, 14 years to an associate's or 16 years to a completed bachelor's degree. For those who did not complete an associate's or bachelor's degree, years of school completed was calculated as 12 plus the percentage of the degree completed through the end of the follow-up period. For those who did not complete a high school diploma or a GED years of school completed was calculated as a percentage of the 12 years given for a completed high school diploma or a GED.

Exhibit 4.7-YM

Characteristics of the Most Recent Educational Program Attended for Those Who Ever Enrolled in Any Program for Young Men

Outcome	Academy Group	Non-Academy Group	Difference	
Duration of attendance in months	*20.6*	*21.3*	*-0.7*	
Month of last attendance (relative to scheduled high school graduation)	*37.1*	*37.1*	*-0.1*	
Hours per week in class	*19.3*	*18.7*	*0.6*	
School considered student full-time (%)	*67.2*	*63.6*	*3.7*	
Took basic reading/math class (%)	*38.1*	*32.0*	*6.0*	
Credential earned or attempted (%)				
Bachelor's degree	*23.6*	*23.9*	*-0.3*	
Associate's degree	*35.6*	*36.2*	*-0.6*	
Certificate or license	*24.6*	*25.1*	*-0.5*	
High school diploma or GED	*5.7*	*4.3*	*1.4*	
No credential	*10.5*	*10.6*	*-0.1*	
Financial resources[1] (%)				
Bank or government loans	*20.8*	*20.8*	*-0.1*	
Scholarships and grants	*31.2*	*37.4*	*-6.2*	
Work-study programs	*4.1*	*1.8*	*2.3*	
Personal savings	*12.4*	*7.9*	*4.6*	*
Family	*15.0*	*15.5*	*-0.6*	
Employment while attending school	*45.8*	*41.2*	*4.6*	
Financial aid from employer	*11.5*	*8.8*	*2.6*	
Completed program (%)	*29.4*	*33.2*	*-3.8*	
Still enrolled (%)	*41.5*	*38.0*	*3.4*	
Left program without completing it (%)	*29.2*	*28.7*	*0.5*	
Primary reason for leaving, for those who left[2] (%)				
School-related reason	*11.9*	*19.7*	*-7.8*	
Personal reason	*18.7*	*15.5*	*3.3*	
Financial/employment reason	*62.0*	*50.7*	*11.3*	
Other reason	*7.4*	*14.1*	*-6.8*	
Sample size (N=494)	263	231		

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

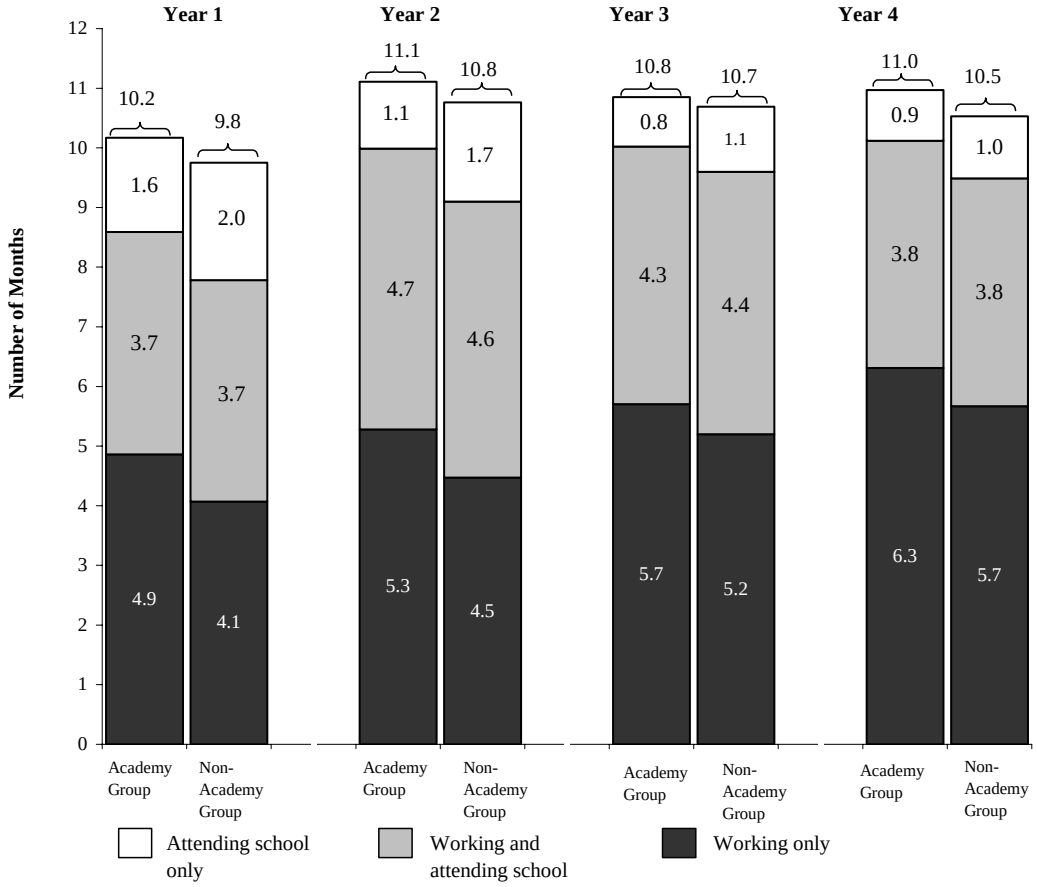
NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using ordinary least squares, controlling for background characteristics. Rounding may cause slight discrepancies in calculating differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Measures are italicized because they refer only to those students who ever attended a post-secondary education program, and thus do not represent a direct experimental comparison of Academy and non-Academy students.

[1]Individuals were asked how the education programs they attended were financed. Because the categories they reported are not mutually exclusive, these percentages do not add up to 100 percent.

[2]Only students who left the program without completing it were asked about their reason for leaving (n=140).

Exhibit 4.8-YM
Year-by-Year Impacts on Months Spent Attending School or Working for Young Men



SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: All measures reflect the average number of months spent in each status during each year of the 48-month follow-up period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating sums and differences.

A two-tailed t-test was applied to differences between the Academy and non-Academy groups. The difference between total months in any activity in year 4 was significant at .1 or lower.

Career Academies Evaluation

Exhibit 4.9-YM

Impacts on Family Formation, Public Assistance, and Behaviors for Young Men

Outcome (%)	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Is a parent	26.6	27.5	-1.0	-3.5	*-1.2*
Is a custodial single parent	5.4	6.8	-1.4	-20.4	*-1.7*
Marital Status					
Married	15.5	13.7	1.8	13.2	*2.2*
Single	81.6	84.5	-2.9	-3.4	*-3.4*
Divorced, separated, or widowed	3.0	2.0	1.1	55.1	*1.3*
Lives with parent(s) or guardian(s)	50.6	57.8	-7.2 *	-12.4	*-8.6*
Ever gone without health insurance in past year	32.5	36.9	-4.5	-12.1	*-5.3*
Received TANF or cash assistance in past year	3.3	2.3	0.9	40.2	*1.1*
Received food stamps in the past year	3.6	3.3	0.3	10.0	*0.4*
Registered to vote	61.0	63.6	-2.6	-4.1	*-3.1*
Any recent illegal or drug-related activity[1]	10.7	11.3	-0.6	-4.9	*-0.7*
Sample size (N=604)	331	273			

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Unless otherwise indicated, statuses were reported for the end of a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students. See Exhibit 3.6.

[1]This measure includes illegal drug use in the past 2 weeks, breaking the law (other than traffic violations) in the past 2 weeks, current gang membership, and any arrests or convictions in the past year.

Career Academies Evaluation

Exhibit 4.1-YW

Year-by-Year Impacts on Employment and Earnings for Young Women

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Years 1-4					
Ever employed (%)	98.0	97.7	0.2	0.2	*0.3*
Ever employed full-time[1] (%)	94.0	92.7	1.3	1.4	*1.6*
Months employed	35.1	34.8	0.3	1.0	*0.4*
Months employed full-time	27.3	26.6	0.6	2.3	*0.8*
Average monthly earnings ($)	995.28	955.96	39.32	4.1	*50.49*
Average weekly hours worked	27.1	26.7	0.5	1.7	*0.6*
Average hourly wage ($)	8.81	8.55	0.26	3.0	*0.33*
Total number of jobs held	3.0	3.0	0.0	-0.1	*0.0*
Average job duration, in months	15.6	15.6	0.0	0.0	*0.0*
Year 1					
Ever employed (%)	82.6	81.4	1.2	1.4	*1.5*
Ever employed full-time[1] (%)	63.6	64.3	-0.7	-1.1	*-0.9*
Months employed	7.6	7.5	0.1	1.4	*0.1*
Months employed full-time	5.2	5.4	-0.2	-3.4	*-0.2*
Average monthly earning ($)	683.18	680.85	2.33	0.3	*2.99*
Average weekly hours worked	22.2	22.0	0.2	0.9	*0.2*
Average hourly wage ($)	6.34	6.09	0.25	4.1	*0.32*
Year 2					
Ever employed (%)	88.7	90.5	-1.8	-2.0	*-2.3*
Ever employed full-time[1] (%)	74.3	74.9	-0.6	-0.7	*-0.7*
Months employed	8.7	8.9	-0.1	-1.4	*-0.2*
Months employed full-time	6.6	6.6	0.0	0.2	*0.0*
Average monthly earnings ($)	937.09	904.54	32.55	3.6	*41.80*
Average weekly hours worked	27.1	26.9	0.2	0.6	*0.2*
Average hourly wage ($)	7.44	7.46	-0.02	-0.3	*-0.03*
Year 3					
Ever employed (%)	91.0	89.7	1.3	1.5	*1.7*
Ever employed full-time[1] (%)	80.1	79.4	0.6	0.8	*0.8*
Months employed	9.2	9.0	0.2	2.7	*0.3*
Months employed full-time	7.6	7.0	0.6	7.9	*0.7*
Average monthly earnings ($)	1,094.42	1,029.74	64.67	6.3	*83.05*
Average weekly hours worked	29.2	28.2	1.0	3.6	*1.3*
Average hourly wage ($)	8.47	8.09	0.38	4.7	*0.49*
Sample size (N=854)	468	386			

(continued)

Exhibit 4.1-YW (continued)

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Year 4					
Ever employed (%)	90.6	91.1	-0.4	-0.5	*-0.6*
Ever employed full-time[1] (%)	81.5	78.9	2.6	3.3	*3.3*
Months employed	9.5	9.4	0.1	1.2	*0.1*
Months employed full-time	7.8	7.6	0.2	2.6	*0.3*
Average monthly earnings ($)	1,248.87	1,197.31	51.55	4.3	*66.20*
Average weekly hours worked	29.9	29.5	0.4	1.5	*0.6*
Average hourly wage ($)	9.29	9.03	0.26	2.9	*0.33*
Last Quarter					
Ever employed (%)	83.4	80.6	2.9	3.6	*3.7*
Ever employed full-time[1] (%)	70.6	67.4	3.2	4.7	*4.1*
Months employed	2.4	2.3	0.0	1.4	*0.0*
Months employed full-time	2.0	1.9	0.1	2.9	*0.1*
Average monthly earnings ($)	1,284.83	1,248.52	36.32	2.9	*46.64*
Average weekly hours worked	29.8	29.6	0.2	0.8	*0.3*
Average hourly wage ($)	9.00	8.46	0.54	6.4	*0.69*
Sample size (N=854)	468	386			

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students. See Exhibit 3.6 for the percentage of the Academy and the non-Academy group ever enrolled in a Career Academy.

Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

Respondents reported their ending or most recent wages and hours worked for each job. This rate was assumed to apply to the entire duration of the job. Thus, if wages or hours were lower at the beginning of each job, these measures may overestimate true average wages and earnings.

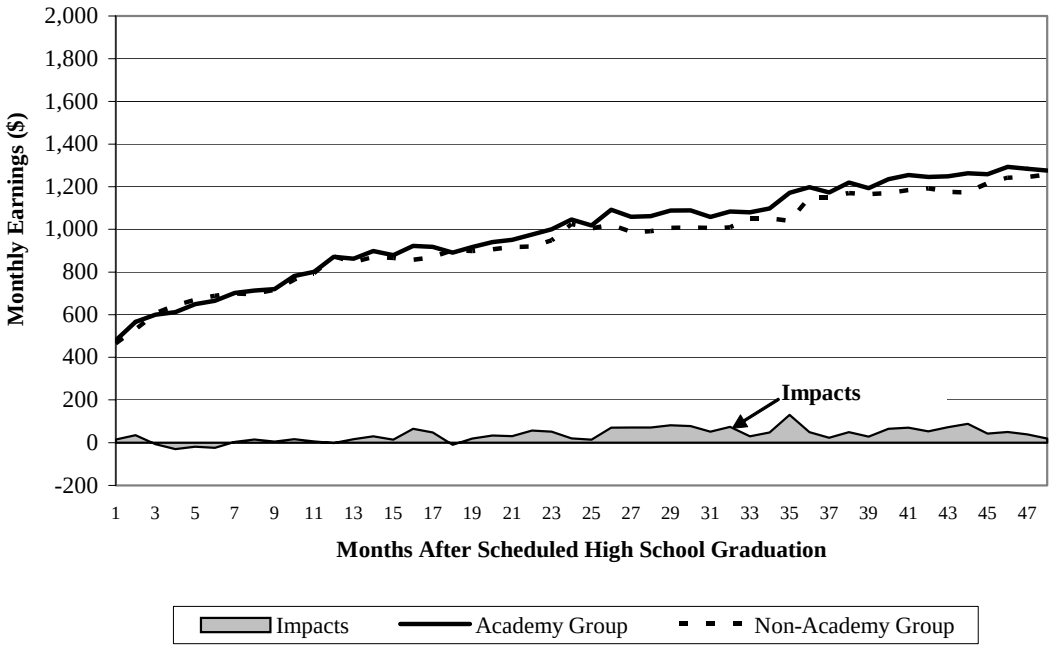
For respondents who were never employed during a given month, earnings, hours, and wages are included in these averages as zeros.

[1]Students were considered employed full-time if they reported working 30 or more hours per week.

Career Academies Evaluation

Exhibit 4.2-YW

Month-by-Month Impacts on Total Monthly Earnings for Young Women



SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Differences in monthly earnings are significant at the .10 level or lower in 37 out of the 48 months studied.

Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

Respondents reported their ending wage at each job, and this rate was assumed to apply to the entire duration of the job. Thus, if wages or hours were lower at the beginning of each job, these measures may overestimate true average earnings.

For respondents who were never employed during a given month, earnings are included in these averages as zeros.

Career Academies Evaluation

Exhibit 4.3-YW

Impacts on the Distribution of Earnings, Hours Worked, and Wages for Young Women

Outcome (%)	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Average monthly earnings					
$0 - $824	41.7	43.1	-1.4	-3.2	*-1.8*
$825 - $1,237	26.7	31.1	-4.4	-14.3	*-5.7*
$1,238 - $1,442	10.0	8.6	1.5	17.1	*1.9*
$1,443 - $1,648	7.0	6.9	0.2	2.4	*0.2*
$1,649 or more	13.6	8.8	4.8 **	54.8	*6.2*
Average weekly hours worked					
0 - 10	8.9	8.7	0.2	2.2	*0.2*
10 - 25	31.1	32.3	-1.1	-3.4	*-1.4*
26 - 35	28.9	31.5	-2.6	-8.3	*-3.4*
36 - 45	23.2	22.0	1.2	5.5	*1.5*
46 or more	6.0	3.4	2.6 *	77.8	*3.4*
Average hourly wage[1]					
$0 - $5.15 (MW)	2.6	1.7	0.8	47.4	*1.1*
$5.16 - $7.73 (1.5xMW)	37.2	36.0	1.2	3.3	*1.5*
$7.74 - $9.01 (1.75xMW)	22.7	29.0	-6.3 **	-21.6	*-8.0*
$9.02 - $10.30 (2.0xMW)	14.5	14.8	-0.2	-1.4	*-0.3*
$10.31 or more	21.8	17.0	4.8 *	28.1	*6.1*
Sample size (N=854)	468	386			

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using ordinary least squares, controlling for background characteristics. Rounding may cause slight discrepancies in calculating differences and sums. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students.

For respondents who were never employed during a given month, earnings, hours, and wages are included in these distributions as zeros.

Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

Respondents reported their ending or most recent wages and hours worked for each job. This rate was assumed to apply to the entire duration of the job. Thus, if wages or hours were lower at the beginning of each job, these measures may overestimate true average wages and earnings.

[1]The upper end of the categories of average hourly wage was set as a multiple of the minimum wage (MW), which from 1997-2003 was $5.15 per hour.

Career Academies Evaluation

Exhibit 4.4-YW

Components of the Impact on Average Monthly Earnings for Young Women

Outcome	Academy Group	Non-Academy Group	Difference
Average monthly earnings ($)	995.28	955.96	39.32
Ever employed (%)	97.97	97.73	0.24
Months employed, for those ever employed	35.81	35.59	0.23
Average monthly earnings during months employed, for those who were ever employed ($)	1,309.21	1,294.71	14.49
Average weekly hours during months employed, for those who were ever employed	36.64	36.77	-0.13
Average hourly wage during months employed, for those who were ever employed ($)	8.95	8.71	0.23

Proportion of the Impact on Average Monthly Earnings Due to Each Component

Components of average monthly earnings impact	$	(%)	$
Impact due to an increase in percentage ever employed	2.30	6.09	6.52
Impact due to increase in months worked, for those ever employed	6.20	16.41	17.55
Impact due to increase in hours worked while working, for those ever employed	-4.53	-11.98	-12.81
Impact due to an increase in hourly wage	33.83	89.48	95.69
Total impact[1]	37.81	100.00	106.94

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: These calculations assume that all components of earnings are independent. This method examined each measure in isolation and calculated how the impact on that measure would change average monthly earnings, if all other components of earnings were held constant. For example, to calculate the impact due solely to the increase in wages, the impact on wages ($0.24 per hour) was multiplied by the number of hours that the control group worked in each month (36.8 hours per week times 4 weeks per month).

[1]Interactions among wages, hours worked, and months worked, were not accounted for; therefore, these calculations are not exact. For comparison with the actual impact of $39.32 per month, the components were also expressed as a percentage of the earnings impact. Finally, the percentages were applied to the actual impact to attain the numbers in the rightmost column.

Career Academies Evaluation

Exhibit 4.5-YW

Differences in Characteristics of the Most Recent Job Held for Those Who Were Employed in the Last Quarter for Young Women

Outcome	Academy Group	Non-Academy Group	Difference	
Job duration in months	*16.9*	*17.4*	*-0.5*	
Month last worked (relative)	*45.9*	*45.8*	*0.0*	
Managerial/supervisory position (%)	*6.8*	*6.4*	*0.4*	
Occupational group (%) [1]				
Management/professional	*27.0*	*26.7*	*0.2*	
Food service and personal service	*11.8*	*10.1*	*1.7*	
Sales and related	*16.8*	*15.0*	*1.8*	
Office and administrative support	*38.8*	*42.0*	*-3.2*	
Construction, production, repair, military	*5.1*	*6.3*	*-1.2*	
Average monthly earnings [2] *($)*	*1,415.3*	*1,380.5*	*34.85*	
At start of job	*1,300.0*	*1,268.5*	*31.46*	
At end of job	*1,551.1*	*1,521.6*	*29.50*	
Difference	*252.8*	*252.7*	*0.13*	
Average hours per week	*35.3*	*35.1*	*0.2*	
At start of job	*34.4*	*34.1*	*0.3*	
At end of job	*36.6*	*36.5*	*0.1*	
Difference	*2.2*	*2.4*	*-0.2*	
Average hourly wage ($)	*10.1*	*9.6*	*0.48*	
At start of job	*9.6*	*9.1*	*0.48*	
At end of job	*10.6*	*10.3*	*0.28*	
Difference	*1.0*	*1.2*	*-0.21*	
Job offers full benefits [3] *(%)*	*40.2*	*40.4*	*-0.2*	
Health plan	*55.7*	*57.6*	*-1.9*	
Sick leave	*54.7*	*52.1*	*2.6*	
Paid vacation days	*56.7*	*56.6*	*0.1*	
Retirement plan	*43.3*	*43.3*	*0.0*	
Uses/used a computer at this job (%)	*75.5*	*75.8*	*-0.3*	
Often/always performed physically demanding tasks	*17.7*	*20.1*	*-2.4*	
Very satisfied at job (%)	*47.9*	*47.9*	*-0.1*	
Very likely to be promoted in the next year [4] *(%)*	*41.9*	*32.6*	*9.3*	**
Job is/was directly related to high school (%)	*29.0*	*23.8*	*5.2*	
Sample size (N=833)	457	376		

(continued)

Exhibit 4.5-YW (continued)

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: All measures apply to jobs held in the last three months of the 48-month follow-up period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using ordinary least squares, controlling for background characteristics. Rounding may cause slight discrepancies in calculating differences and sums. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Measures are italicized because they refer only to those students who were employed during the last three months of the follow-up period, and thus do not represent a direct experimental comparison of Academy and non-Academy students.

[1]Occupational groups are based on the U.S. Department of Labor's Standard Occupational Classification (SOC) system.

[2]Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

[3]Full benefits include health plan, sick leave, paid vacation days, and retirement plan.

[4]Likelihood of being promoted was only asked of those who were employed at the time of the interview (n=692).

Career Academies Evaluation

Exhibit 4.6-YW

Impacts on Educational Attainment for Young Women

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Ever enrolled in a Career Academy during high school (%)	86.1	8.3	77.9 ***	--	--
Was enrolled in a Career Academy at the end of scheduled grade 12 (%)	54.9	5.5	49.4 ***	--	--
High school completion status (%)					
Earned high school diploma or GED	92.3	91.6	0.8	0.9	*1.0*
Earned high school diploma	83.3	85.5	-2.3	-2.6	*-2.9*
On-time graduate[1]	74.6	75.3	-0.7	-0.9	*-0.9*
Late graduate	8.5	10.1	-1.6	-15.9	*-2.1*
Earned a GED	9.2	6.2	3.1	50.1	*4.0*
Post-secondary education enrollment[2] (%)					
Ever enrolled in post-secondary education	81.8	79.2	2.6	3.3	*3.4*
Highest post-secondary education enrollment					
Four-year college	27.1	25.0	2.1	8.3	*2.7*
Two-year college	38.4	38.1	0.3	0.8	*0.4*
Skills training, technical or trade school	16.2	15.9	0.3	1.7	*0.3*
Months enrolled in post-secondary education	22.1	21.9	0.1	0.6	*0.2*
Highest credential completed or in progress[3] (%)					
Any post-secondary credential	56.1	55.4	0.7	1.3	*0.9*
Completed	26.0	26.0	0.1	0.2	*0.1*
In progress	30.3	29.6	0.7	2.2	*0.8*
Bachelor's degree	17.8	17.7	0.1	0.4	*0.1*
Completed	2.8	2.9	-0.2	-6.3	*-0.2*
In progress	15.0	14.7	0.3	2.3	*0.4*
Associate's degree	17.8	16.4	1.5	8.9	*1.9*
Completed	5.5	4.0	1.5	38.8	*2.0*
In progress	12.2	12.2	0.0	-0.1	*0.0*
Skills training certificate or license	20.6	21.4	-0.8	-3.8	*-1.1*
Completed	17.7	18.9	-1.2	-6.4	*-1.5*
In progress	3.1	2.7	0.4	14.1	*0.5*
Years of schooling completed[4]	12.7	12.7	0.0	0.1	*0.0*
Sample size (N=854)	468	386			

(continued)

Exhibit 4.6-YW (continued)

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Unless otherwise indicated, statuses reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating sums and differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students.

[1]Students were considered on-time graduates if they graduated in June or earlier of the year they were scheduled to graduate.

[2]Students must have earned a high school diploma or GED to be considered enrolled in a post-secondary education program.

[3]A credential was considered "in progress" if the student reported attempting it in a program that he/she was currently attending (within three months of the end of the follow-up period) and expected to complete.

[4]Years of school completed was calculated by assigning 12 years to a completed high school diploma or GED, 14 years to an sssociate's or 16 years to a completed bachelor's degree. For those who did not complete an associate's or a bachelor's degree, years of school completed was calculated as 12 plus the percentage of the degree completed through the end of the follow-up period. For those who did not complete a high school diploma or a GED, years of school completed was calculated as a percentage of the 12 years given for a completed high school diploma or a GED.

Exhibit 4.7-YW

Characteristics of the Most Recent Educational Program Attended for Those Who Ever Enrolled in Any Program for Young Women

Outcome	Academy Group	Non-Academy Group	Difference	
Duration of attendance in months	*19.8*	*21.7*	*-1.8*	
Month of last attendance				
(relative to scheduled high school graduation)	*37.3*	*38.3*	*-0.9*	
Hours per week in class	*19.0*	*18.2*	*0.9*	
School considered student full-time (%)	*71.5*	*68.1*	*3.4*	
Took basic reading/math class (%)	*35.6*	*33.3*	*2.2*	
Credential earned or attempted (%)				
Bachelor's degree	*24.8*	*26.8*	*-2.1*	
Associate's degree	*37.1*	*35.7*	*1.4*	
Certificate or license	*24.1*	*25.6*	*-1.6*	
High school diploma or GED	*3.8*	*3.9*	*-0.1*	
No credential	*10.6*	*8.2*	*2.4*	
Financial resources [1] (%)				
Bank or government loans	*22.0*	*23.5*	*-1.5*	
Scholarships and grants	*50.5*	*47.4*	*3.1*	
Work-study programs	*1.9*	*3.3*	*-1.4*	
Personal savings	*10.7*	*12.2*	*-1.5*	
Family	*12.7*	*13.9*	*-1.1*	
Employment while attending school	*39.8*	*37.7*	*2.1*	
Financial aid from employer	*4.7*	*5.8*	*-1.2*	
Completed program (%)	*26.7*	*28.1*	*-1.4*	
Still enrolled (%)	*41.9*	*41.1*	*0.8*	
Left program without completing it (%)	*31.5*	*31.0*	*0.5*	
Primary reason for leaving, for those who left [2] (%)				
School-related reason	*13.8*	*5.8*	*8.0*	*
Personal reason	*37.5*	*35.3*	*2.1*	
Financial/employment reason	*38.5*	*47.3*	*-8.8*	
Other reason	*10.0*	*11.6*	*-1.7*	
Sample size (N=1,208)	659	549		

(continued)

Exhibit 4.7-YW (continued)

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using ordinary least squares, controlling for background characteristics. Rounding may cause slight discrepancies in calculating differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

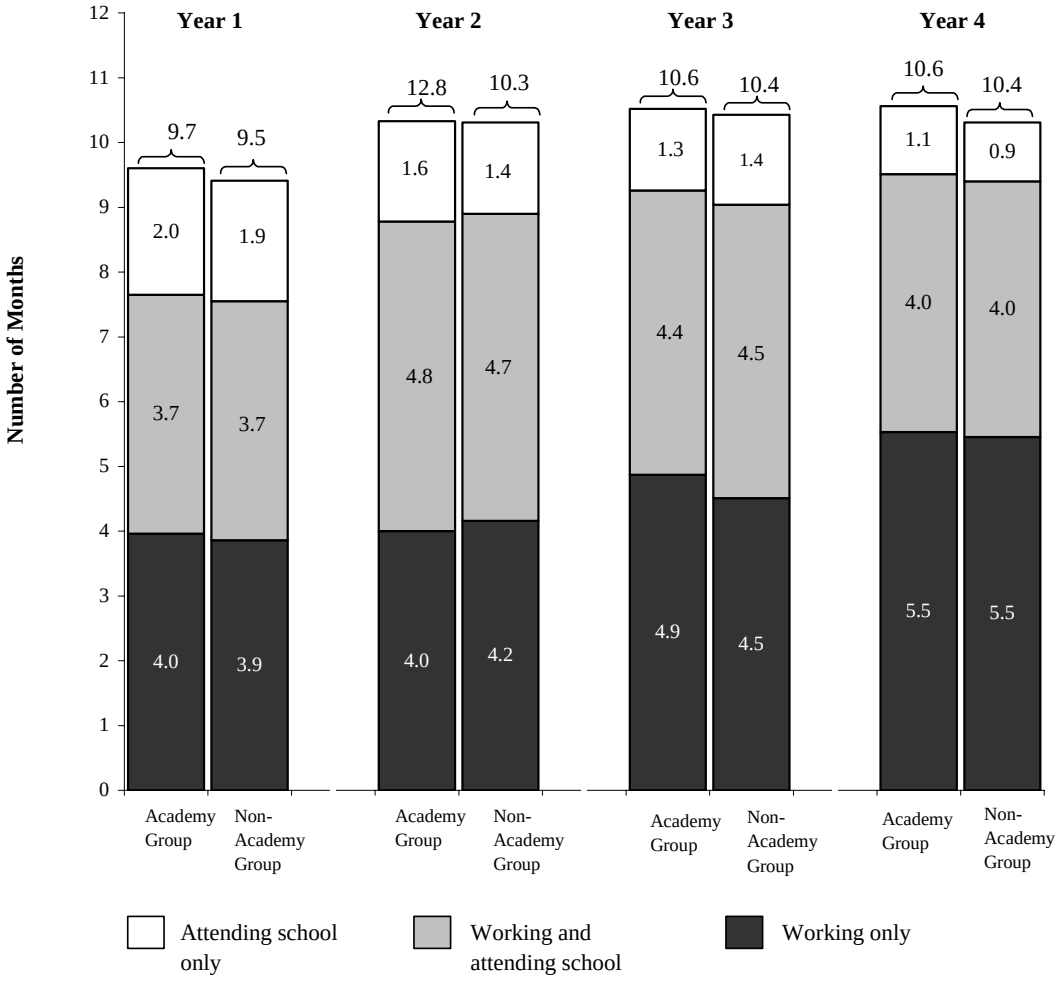
Measures are italicized because they refer only to those students who ever attended a post-secondary education program, and thus do not represent a direct experimental comparison of Academy and non-Academy students.

[1]Individuals were asked how the education programs they attended were financed. Because the categories they reported are not mutually exclusive, these percentages do not add up to 100 percent.

[2]Only students who left the program without completing it were asked about their reason for leaving (n=224).

Exhibit 4.8-YW

Year-by-Year Impacts on Months Spent Attending School or Working for Young Women



SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: All measures reflect the average number of months spent in each status during each year of the 48-month follow-up period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating sums and differences.

A two-tailed t-test was applied to differences between the Academy and non-Academy groups. The difference between total months in any activity in year 4 was significant at .1 or lower.

Career Academies Evaluation

Exhibit 4.9-YW

Impacts on Family Formation, Public Assistance, and Behaviors for Young Women

Outcome (%)	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Is a parent	44.3	40.3	4.1	10.1	*5.2*
Is a custodial single parent	28.4	24.9	3.5	13.9	*4.4*
Marital Status					
Married	23.0	22.9	0.1	0.3	*0.1*
Single	73.6	74.4	-0.7	-1.0	*-0.9*
Divorced, separated, or widowed	3.2	2.6	0.6	23.5	*0.8*
Lives with parent(s) or guardian(s)	46.4	48.3	-2.0	-4.0	*-2.5*
Ever gone without health insurance in past year	23.2	27.1	-3.9	-14.5	*-5.0*
Received TANF or cash assistance in past year	10.0	8.4	1.6	19.1	*2.1*
Received food stamps in the past year	14.1	11.4	2.8	24.1	*3.5*
Registered to vote	70.2	65.8	4.4	6.6	*5.6*
Any recent illegal or drug-related activity[1]	3.6	2.5	1.1	44.0	*1.4*
Sample size (N=854)	468	386			

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Unless otherwise indicated, statuses were reported for the end of a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students. See Exhibit 3.6.

[1]This measure includes illegal drug use in the past 2 weeks, breaking the law (other than traffic violations) in the past 2 weeks, current gang membership, and any arrests or convictions in the past year.

Career Academies Evaluation

Exhibit 4.1-YWN

Year-by-Year Impacts on Employment and Earnings for Young Women Without Children

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Years 1-4					
Ever employed (%)	*98.3*	*99.3*	*-1.1*	*-1.1*	*-1.4*
Ever employed full-time[1] (%)	*92.4*	*93.0*	*-0.6*	*-0.6*	*-0.7*
Months employed	*36.6*	*37.4*	*-0.8*	*-2.1*	*-1.0*
Months employed full-time	*26.5*	*26.5*	*0.1*	*0.2*	*0.1*
Average monthly earnings ($)	*1,021.69*	*1,025.03*	*-3.35*	*-0.3*	*-4.28*
Average weekly hours worked	*27.2*	*27.9*	*-0.7*	*-2.4*	*-0.9*
Average hourly wage ($)	*9.13*	*8.94*	*0.20*	*2.2*	*0.26*
Total number of jobs held	*3.0*	*3.1*	*-0.2*	*-4.9*	*-0.2*
Average job duration, in months	*16.8*	*17.0*	*-0.2*	*-0.9*	*-0.2*
Year 1					
Ever employed (%)	*83.2*	*86.3*	*-3.1*	*-3.6*	*-4.0*
Ever employed full-time[1] (%)	*57.6*	*63.9*	*-6.3*	*-9.9*	*-8.1*
Months employed	*7.7*	*8.1*	*-0.4*	*-5.0*	*-0.5*
Months employed full-time	*4.6*	*5.4*	*-0.8*	*-14.0*	*-1.0*
Average monthly earnings ($)	*674.13*	*713.87*	*-39.74*	*-5.6*	*-50.77*
Average weekly hours worked	*21.0*	*22.7*	*-1.6*	*-7.2*	*-2.1*
Average hourly wage ($)	*6.59*	*6.48*	*0.11*	*1.8*	*0.14*
Year 2					
Ever employed (%)	*89.6*	*94.0*	*-4.4 **	*-4.7*	*-5.7*
Ever employed full-time[1] (%)	*68.7*	*74.6*	*-5.9*	*-7.9*	*-7.6*
Months employed	*8.9*	*9.6*	*-0.7 **	*-7.2*	*-0.9*
Months employed full-time	*6.1*	*6.6*	*-0.4*	*-6.7*	*-0.6*
Average monthly earnings ($)	*924.34*	*968.16*	*-43.82*	*-4.5*	*-55.99*
Average weekly hours worked	*26.5*	*28.2*	*-1.7*	*-6.0*	*-2.2*
Average hourly wage ($)	*7.63*	*7.90*	*-0.28*	*-3.5*	*-0.36*
Year 3					
Ever employed (%)	*94.1*	*93.2*	*0.8*	*0.9*	*1.1*
Ever employed full-time[1] (%)	*81.2*	*78.7*	*2.5*	*3.2*	*3.2*
Months employed	*9.8*	*9.7*	*0.2*	*1.6*	*0.2*
Months employed full-time	*7.6*	*7.0*	*0.6*	*9.2*	*0.8*
Average monthly earnings ($)	*1,127.82*	*1,119.14*	*8.69*	*0.8*	*11.10*
Average weekly hours worked	*29.9*	*29.9*	*0.0*	*0.1*	*0.0*
Average hourly wage ($)	*8.79*	*8.55*	*0.24*	*2.8*	*0.31*
Sample size (N=490)	*256*	*234*			

(continued)

Exhibit 4.1-YWN (continued)

Outcome	*Academy Group*	*Non-Academy Group*	*Impact*	*Percent Change*	*Impact per Enrollee*
Year 4					
Ever employed (%)	*92.4*	*94.2*	*-1.8*	*-1.9*	*-2.3*
Ever employed full-time[1] (%)	*81.7*	*77.5*	*4.3*	*5.5*	*5.4*
Months employed	*10.2*	*10.0*	*0.2*	*1.6*	*0.2*
Months employed full-time	*8.1*	*7.5*	*0.6*	*7.6*	*0.7*
Average monthly earnings ($)	*1,342.98*	*1,289.66*	*53.32*	*4.1*	*68.12*
Average weekly hours worked	*31.5*	*30.9*	*0.6*	*1.8*	*0.7*
Average hourly wage ($)	*9.88*	*9.77*	*0.11*	*1.2*	*0.14*
Last Quarter					
Ever employed (%)	*87.7*	*86.8*	*0.9*	*1.1*	*1.2*
Ever employed full-time[1] (%)	*72.6*	*68.4*	*4.2*	*6.1*	*5.3*
Months employed	*2.5*	*2.5*	*0.0*	*0.3*	*0.0*
Months employed full-time	*2.0*	*1.9*	*0.1*	*5.7*	*0.1*
Average monthly earnings ($)	*1,386.57*	*1,370.04*	*16.53*	*1.2*	*21.12*
Average weekly hours worked	*31.4*	*31.2*	*0.2*	*0.6*	*0.3*
Average hourly wage ($)	*9.77*	*9.42*	*0.34*	*3.6*	*0.43*
Sample size (N=490)	*256*	*234*			

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. The numbers in this table are italicized because they are nonexperimental.

Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

Respondents reported their ending or most recent wages and hours worked for each job. This rate was assumed to apply to the entire duration of the job. Thus, if wages or hours were lower at the beginning of each job, these measures may overestimate true average wages and earnings.

For respondents who were never employed during a given month, earnings, hours, and wages are included in these averages as zeros.

[1]Students were considered employed full-time if they reported working 30 or more hours per week.

Career Academies Evaluation

Exhibit 4.2-YWN

Impacts on Educational Attainment for Young Women Without Children

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Ever enrolled in a Career Academy during high school (%)	*88.2*	*9.9*	*78.3* ***	--	--
Was enrolled in a Career Academy at the end of scheduled grade 12 (%)	*66.7*	*7.2*	*59.5* ***	--	--
High school completion status (%)					
Earned high school diploma or GED	*98.6*	*97.3*	*1.2*	*1.3*	*1.6*
Earned high school diploma	*91.9*	*94.5*	*-2.6*	*-2.8*	*-3.3*
On-time graduate[1]	*84.8*	*85.6*	*-0.9*	*-1.0*	*-1.1*
Late graduate	*7.2*	*8.8*	*-1.6*	*-18.4*	*-2.1*
Earned a GED	*6.6*	*2.6*	*4.0* **	*152.5*	*5.1*
Post-secondary education enrollment[2] (%)					
Ever enrolled in post-secondary education	*93.0*	*89.2*	*3.7*	*4.2*	*4.8*
Highest post-secondary education enrollment					
Four-year college	*37.6*	*34.1*	*3.5*	*10.3*	*4.5*
Two-year college	*45.3*	*44.4*	*0.9*	*2.0*	*1.1*
Skills training, technical or trade school	*9.8*	*10.3*	*-0.5*	*-5.2*	*-0.7*
Months enrolled in post-secondary education	*29.7*	*28.4*	*1.3*	*4.5*	*1.6*
Highest credential completed or in progress[3] (%)					
Any post-secondary credential	*68.0*	*63.2*	*4.8*	*7.5*	*6.1*
Completed	*26.6*	*25.2*	*1.4*	*5.7*	*1.8*
In progress	*41.4*	*38.1*	*3.3*	*8.7*	*4.2*
Bachelor's degree	*26.8*	*25.3*	*1.5*	*6.0*	*1.9*
Completed	*3.7*	*4.2*	*-0.5*	*-11.7*	*-0.6*
In progress	*23.2*	*21.1*	*2.2*	*10.3*	*2.8*
Associate's degree	*22.6*	*20.9*	*1.7*	*8.1*	*2.2*
Completed	*7.8*	*5.1*	*2.7*	*52.2*	*3.4*
In progress	*14.7*	*15.6*	*-0.9*	*-5.6*	*-1.1*
Skills training certificate or license	*18.2*	*16.9*	*1.3*	*7.6*	*1.6*
Completed	*14.8*	*15.4*	*-0.6*	*-3.7*	*-0.7*
In progress	*3.3*	*1.4*	*1.9*	*136.0*	*2.4*
Years of schooling completed[4]	*13.1*	*13.1*	*0.1*	*0.5*	*0.1*
Sample size (N=490)	*256*	*234*			

(continued)

Exhibit 4.2-YWN (continued)

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Unless otherwise indicated, statuses reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating sums and differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. This numbers in this table are italized because they are nonexperimental.

[1]Students were considered on-time graduates if they graduated in June or earlier of the year they were scheduled to graduate.

[2]Students must have earned a high school diploma or GED to be considered enrolled in a post-secondary education program.

[3]A credential was considered "in progress" if the student reported attempting it in a program that he/she was currently attending (within three months of the end of the follow-up period) and expected to complete.

[4]Years of school completed was calculated by assigning 12 years to a completed high school diploma or GED, 14 years to an associate's or 16 years to a completed bachelor's degree. For those who did not complete an associate's or bachelor's degree, years of school completed was calculated as 12 plus the percentage of the degree completed through the end of the follow-up period. For those who did not complete a high school diploma or a GED years of school completed was calculated as a percentage of the 12 years given for a completed high school diploma or a GED.

Career Academies Evaluation

Exhibit 4.1-YWC

Year-by-Year Impacts on Employment and Earnings for Young Women With Children

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Years 1-4					
Ever employed (%)	*97.2*	*95.5*	*1.7*	*1.8*	*2.2*
Ever employed full-time[1] (%)	*95.9*	*92.6*	*3.3*	*3.5*	*4.3*
Months employed	*33.2*	*30.9*	*2.2*	*7.3*	*2.9*
Months employed full-time	*28.1*	*26.7*	*1.3*	*5.0*	*1.7*
Average monthly earnings ($)	*945.04*	*838.13*	*106.91*	*12.8*	*138.74*
Average weekly hours worked	*27.0*	*24.7*	*2.3*	*9.5*	*3.0*
Average hourly wage ($)	*8.35*	*8.07*	*0.28*	*3.5*	*0.36*
Total number of jobs held	*3.1*	*2.9*	*0.3*	*8.8*	*0.3*
Average job duration, in months	*13.9*	*13.7*	*0.2*	*1.5*	*0.3*
Year 1					
Ever employed (%)	*81.2*	*74.8*	*6.4*	*8.5*	*8.3*
Ever employed full-time[1] (%)	*70.4*	*65.5*	*4.9*	*7.5*	*6.4*
Months employed	*7.5*	*6.7*	*0.7*	*10.5*	*0.9*
Months employed full-time	*5.9*	*5.6*	*0.3*	*5.1*	*0.4*
Average monthly earnings ($)	*682.35*	*644.08*	*38.27*	*5.9*	*49.66*
Average weekly hours worked	*23.3*	*21.1*	*2.2*	*10.5*	*2.9*
Average hourly wage ($)	*5.85*	*5.50*	*0.35*	*6.4*	*0.45*
Year 2					
Ever employed (%)	*87.4*	*86.2*	*1.2*	*1.4*	*1.5*
Ever employed full-time[1] (%)	*80.9*	*75.5*	*5.5*	*7.2*	*7.1*
Months employed	*8.4*	*7.8*	*0.6*	*8.3*	*0.8*
Months employed full-time	*7.0*	*6.6*	*0.5*	*6.9*	*0.6*
Average monthly earnings ($)	*930.59*	*801.85*	*128.74*	*16.1*	*167.06*
Average weekly hours worked	*27.8*	*25.1*	*2.7*	*10.6*	*3.5*
Average hourly wage ($)	*7.11*	*6.96*	*0.15*	*2.2*	*0.19*
Year 3					
Ever employed (%)	*86.7*	*84.4*	*2.2*	*2.7*	*2.9*
Ever employed full-time[1] (%)	*79.3*	*79.4*	*-0.1*	*-0.2*	*-0.2*
Months employed	*8.5*	*8.0*	*0.5*	*6.7*	*0.7*
Months employed full-time	*7.6*	*6.9*	*0.6*	*9.1*	*0.8*
Average monthly earnings ($)	*1,052.56*	*880.83*	*171.72* **	*19.5*	*222.84*
Average weekly hours worked	*28.7*	*25.6*	*3.1*	*12.1*	*4.0*
Average hourly wage ($)	*7.92*	*7.43*	*0.49*	*6.5*	*0.64*
Sample size (N=363)	*211*	*152*			

(continued)

Exhibit 4.1-YWC (continued)

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Year 4					
Ever employed (%)	*88.2*	*85.8*	*2.3*	*2.7*	*3.0*
Ever employed full-time[1] (%)	*81.0*	*79.7*	*1.3*	*1.7*	*1.7*
Months employed	*8.7*	*8.4*	*0.4*	*4.1*	*0.5*
Months employed full-time	*7.5*	*7.6*	*-0.1*	*-1.2*	*-0.1*
Average monthly earnings ($)	*1,126.13*	*1,027.99*	*98.15*	*9.6*	*127.37*
Average weekly hours worked	*28.3*	*26.8*	*1.4*	*5.3*	*1.9*
Average hourly wage ($)	*8.49*	*7.88*	*0.61*	*7.8*	*0.79*
Last Quarter					
Ever employed (%)	*78.2*	*71.1*	*7.1*	*10.0*	*9.2*
Ever employed full-time[1] (%)	*68.4*	*65.6*	*2.8*	*4.3*	*3.7*
Months employed	*2.2*	*2.1*	*0.1*	*5.9*	*0.2*
Months employed full-time	*1.9*	*1.9*	*0.0*	*0.7*	*0.0*
Average monthly earnings ($)	*1,153.30*	*1,045.57*	*107.73*	*10.3*	*139.80*
Average weekly hours worked	*27.9*	*26.9*	*1.1*	*3.9*	*1.4*
Average hourly wage ($)	*7.94*	*6.88*	*1.06* *	*15.4*	*1.38*
Sample size (N=363)	*211*	*152*			

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. The numbers in this table are italicized because they are nonexperimental.

Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

Respondents reported their ending or most recent wages and hours worked for each job. This rate was assumed to apply to the entire duration of the job. Thus, if wages or hours were lower at the beginning of each job, these measures may overestimate true average wages and earnings.

For respondents who were never employed during a given month, earnings, hours, and wages are included in these averages as zeros.

[1]Students were considered employed full-time if they reported working 30 or more hours per week.

Career Academies Evaluation

Exhibit 4.2-YWC

Impacts on Educational Attainment for Young Women With Children

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Ever enrolled in a Career Academy during high school (%)	*83.3*	*6.3*	*77.1* ***	--	--
Was enrolled in a Career Academy at the end of scheduled grade 12 (%)	*41.3*	*4.2*	*37.1* ***	--	--
High school completion status (%)					
Earned high school diploma or GED	*84.7*	*83.3*	*1.5*	*1.7*	*1.9*
Earned high school diploma	*75.2*	*72.0*	*3.2*	*4.5*	*4.2*
On-time graduate[1]	*63.5*	*59.5*	*4.0*	*6.8*	*5.2*
Late graduate	*10.4*	*11.4*	*-1.0*	*-8.8*	*-1.3*
Earned a GED	*10.2*	*11.8*	*-1.6*	*-13.8*	*-2.1*
Post-secondary education enrollment[2] (%)					
Ever enrolled in post-secondary education	*68.0*	*64.5*	*3.4*	*5.3*	*4.4*
Highest post-secondary education enrollment					
Four-year college	*13.3*	*10.5*	*2.8*	*27.1*	*3.7*
Two-year college	*30.7*	*29.6*	*1.1*	*3.7*	*1.4*
Skills training, technical or trade school	*24.1*	*24.7*	*-0.6*	*-2.4*	*-0.8*
Months enrolled in post-secondary education	*11.9*	*12.0*	*0.0*	*-0.2*	*0.0*
Highest credential completed or in progress[3] (%)					
Any post-secondary credential	*42.3*	*46.1*	*-3.8*	*-8.3*	*-4.9*
Completed	*25.7*	*27.0*	*-1.3*	*-4.8*	*-1.7*
In progress	*16.0*	*18.6*	*-2.6*	*-14.2*	*-3.4*
Bachelor's degree	*6.4*	*5.6*	*0.9*	*15.3*	*1.1*
Completed	*1.5*	*0.7*	*0.8*	*105.6*	*1.0*
In progress	*5.0*	*4.9*	*0.1*	*2.7*	*0.2*
Associate's degree	*12.8*	*13.0*	*-0.2*	*-1.5*	*-0.2*
Completed	*2.7*	*2.5*	*0.1*	*4.9*	*0.2*
In progress	*9.8*	*10.3*	*-0.4*	*-4.0*	*-0.5*
Skills training certificate or license	*23.9*	*28.6*	*-4.7*	*-16.5*	*-6.1*
Completed	*21.6*	*23.7*	*-2.1*	*-8.8*	*-2.7*
In progress	*2.5*	*5.1*	*-2.5*	*-50.1*	*-3.3*
Years of schooling completed[4]	*12.1*	*12.1*	*0.0*	*0.3*	*0.0*
Sample size (N=363)	*211*	*152*			

(continued)

Exhibit 4.2-YWC (continued)

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Unless otherwise indicated, statuses reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating sums and differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. The numbers in this table are italized because they are nonexperimental.

[1]Students were considered on-time graduates if they graduated in June or earlier of the year they were scheduled to graduate.

[2]Students must have earned a high school diploma or GED to be considered enrolled in a post-secondary education program.

[3]A credential was considered "in progress" if the student reported attempting it in a program that he/she was currently attending (within three months of the end of the follow-up period) and expected to complete.

[4]Years of school completed was calculated by assigning 12 years to a completed high school diploma or GED, 14 years to an associate's or 16 years to a completed bachelor's degree. For those who did not complete an associate's or bachelor's degree, years of school completed was calculated as 12 plus the percentage of the degree completed through the end of the follow-up period. For those who did not complete a high school diploma or a GED years of school completed was calculated as a percentage of the 12 years given for a completed high school diploma or a GED.

Unit 5

Impacts for Risk Subgroups

Career Academies Evaluation

Exhibit 5.1-HR

Year-by-Year Impacts on Employment and Earnings for the High-Risk Subgroup

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Years 1-4					
Ever employed (%)	98.6	96.7	1.9	1.9	*2.3*
Ever employed full-time[1] (%)	96.1	95.5	0.6	0.7	*0.8*
Months employed	35.6	33.4	2.2	6.6	*2.7*
Months employed full-time	30.7	27.8	2.9 *	10.3	*3.5*
Average monthly earnings ($)	1,204.27	1,036.20	168.07 *	16.2	*204.81*
Average weekly hours worked	30.1	27.9	2.2	8.0	*2.7*
Average hourly wage ($)	9.28	8.74	0.53	6.1	*0.65*
Total number of jobs held	3.0	2.9	0.2	5.9	*0.2*
Average job duration, in months	15.9	15.6	0.4	2.2	*0.4*
Year 1					
Ever employed (%)	82.0	81.9	0.1	0.1	*0.1*
Ever employed full-time[1] (%)	69.7	67.2	2.5	3.7	*3.0*
Months employed	7.8	7.2	0.7	9.3	*0.8*
Months employed full-time	6.3	5.5	0.8	14.9	*1.0*
Average monthly earnings ($)	847.78	720.40	127.38	17.7	*155.23*
Average weekly hours worked	25.2	22.6	2.7	11.8	*3.2*
Average hourly wage ($)	6.58	6.44	0.14	2.1	*0.17*
Year 2					
Ever employed (%)	88.1	85.5	2.6	3.0	*3.2*
Ever employed full-time[1] (%)	78.3	74.1	4.2	5.7	*5.1*
Months employed	8.9	8.7	0.3	3.4	*0.4*
Months employed full-time	7.6	6.9	0.7	10.3	*0.9*
Average monthly earnings ($)	1,137.85	996.22	141.63	14.2	*172.59*
Average weekly hours worked	30.7	28.5	2.2	7.7	*2.7*
Average hourly wage ($)	7.91	7.85	0.05	0.7	*0.06*
Year 3					
Ever employed (%)	92.8	87.0	5.8 *	6.7	*7.1*
Ever employed full-time[1] (%)	84.3	80.7	3.6	4.5	*4.4*
Months employed	9.3	8.8	0.5	5.9	*0.6*
Months employed full-time	8.1	7.6	0.5	6.8	*0.6*
Average monthly earnings ($)	1,321.71	1,173.74	147.97	12.6	*180.32*
Average weekly hours worked	31.7	30.1	1.6	5.3	*1.9*
Average hourly wage ($)	9.23	8.33	0.90 *	10.9	*1.10*
Sample size (N=360)	206	154			

(continued)

Exhibit 5.1-HR (continued)

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Year 4					
Ever employed (%)	91.2	84.6	6.6 *	7.8	*8.1*
Ever employed full-time[1] (%)	85.1	79.2	5.9	7.4	*7.2*
Months employed	9.5	8.8	0.7	8.1	*0.9*
Months employed full-time	8.6	7.8	0.8	10.0	*1.0*
Average monthly earnings ($)	1,515.32	1,271.53	243.79 *	19.2	*297.09*
Average weekly hours worked	32.9	30.7	2.2	7.2	*2.7*
Average hourly wage ($)	10.12	8.82	1.30 *	14.8	*1.58*
Last Quarter					
Ever employed (%)	85.5	76.7	8.8 *	11.5	*10.7*
Ever employed full-time[1] (%)	77.4	69.1	8.3 *	12.0	*10.1*
Months employed	2.4	2.2	0.2	9.0	*0.2*
Months employed full-time	2.2	2.0	0.2	12.1	*0.3*
Average monthly earnings ($)	1,584.88	1,347.85	237.03 *	17.6	*288.85*
Average weekly hours worked	33.0	30.4	2.6	8.6	*3.2*
Average hourly wage ($)	9.99	8.74	1.25	14.3	*1.52*
Sample size (N=360)	206	154			

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. High-risk students (approximately 25 percent of both the Academy and the non-Academy groups) have an array of these characteristics associated with the highest likelihood of droping out.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students. See Exhibit 3.6 for the percentage of the Academy and the non-Academy group ever enrolled in a Career Academy.

Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

Respondents reported their ending or most recent wages and hours worked for each job. This rate was assumed to apply to the entire duration of the job. Thus, if wages or hours were lower at the beginning of each job, these measures may overestimate true average wages and earnings.

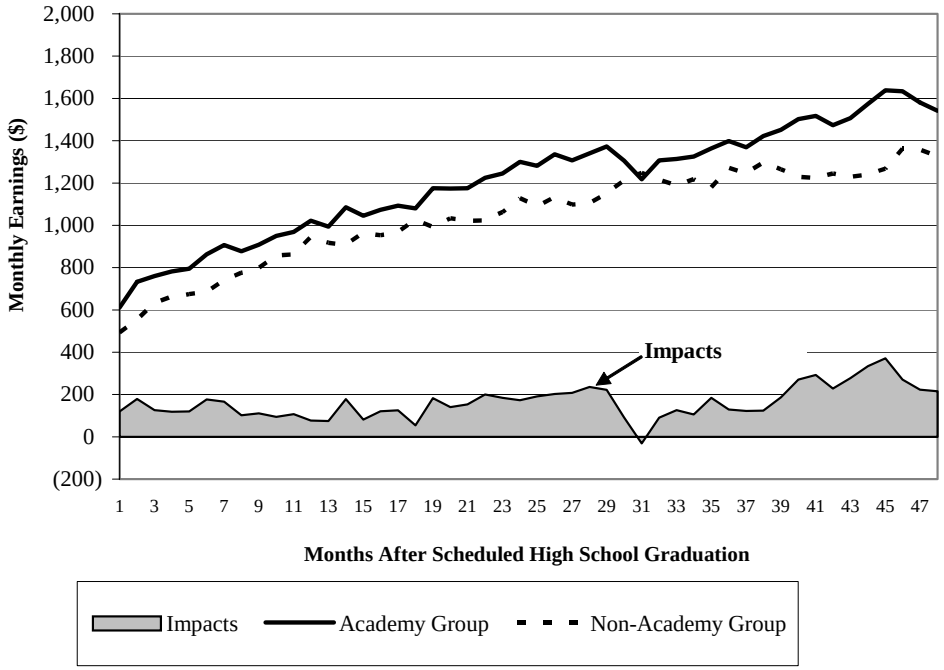
For respondents who were never employed during a given month, earnings, hours, and wages are included in these averages as zeros.

[1]Students were considered employed full-time if they reported working 30 or more hours per week.

Career Academies Evaluation

Exhibit 5.2-HR

Month-by-Month Impacts on Average Earnings for the High-Risk Subgroup



SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Differences in monthly earnings are significant at the .10 level or lower in 37 out of the 48 months studied.

The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. High-risk students (approximately 25 percent of both the Academy and the non-Academy groups) have an array of these characteristics associated with the highest likelihood of dropping out.

Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

Respondents reported their ending wage at each job, and this rate was assumed to apply to the entire duration of the job. Thus, if wages or hours were lower at the beginning of each job, these measures may overestimate true average earnings.

For respondents who were never employed during a given month, earnings are included in these averages as zeros.

Career Academies Evaluation

Exhibit 5.3-HR

Impacts on Educational Attainment for the High-Risk Subgroup

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Ever enrolled in a Career Academy during high school (%)	83.5	1.4	82.1 ***	--	--
Was enrolled in a Career Academy at the end of scheduled grade 12 (%)	34.6	1.3	33.2 ***	--	--
High school completion status (%)					
Earned high school diploma or GED	82.7	83.2	-0.5	-0.6	*-0.6*
Earned high school diploma	64.8	64.5	0.3	0.4	*0.3*
On-time graduate[1]	52.9	49.0	3.9	7.9	*4.7*
Late graduate	11.6	15.4	-3.8	-24.5	*-4.6*
Earned a GED	17.7	18.5	-0.8	-4.2	*-0.9*
Post-secondary education enrollment[2] (%)					
Ever enrolled in post-secondary education	60.2	71.5	-11.2 **	-15.7	*-13.7*
Highest post-secondary education enrollment					
Four-year college	9.3	8.9	0.4	4.3	*0.5*
Two-year college	29.7	43.3	-13.6 **	-31.5	*-16.6*
Skills training, technical or trade school	21.5	19.3	2.2	11.3	*2.7*
Months enrolled in post-secondary education	10.8	14.7	-3.9 **	-26.5	*-4.8*
Highest credential completed or in progress[3] (%)					
Any post-secondary credential	39.8	48.9	-9.1	-18.6	*-11.1*
Completed	24.8	27.9	-3.1	-11.2	*-3.8*
In progress	15.0	20.9	-5.9	-28.1	*-7.1*
Bachelor's degree	3.4	6.5	-3.0	-47.0	*-3.7*
Completed	0.3	0.9	-0.5	-60.7	*-0.6*
In progress	3.1	5.6	-2.5	-45.0	*-3.1*
Associate's degree	13.9	17.7	-3.8	-21.4	*-4.6*
Completed	3.7	6.7	-3.0	-44.1	*-3.6*
In progress	10.0	11.0	-1.0	-9.2	*-1.2*
Skills training certificate or license	22.4	24.7	-2.3	-9.4	*-2.8*
Completed	20.7	20.4	0.3	1.6	*0.4*
In progress	1.7	4.3	-2.7	-61.8	*-3.3*
Years of schooling completed[4]	12.0	12.2	-0.2	-1.4	*-0.2*
Sample size (N=360)	206	154			

(continued)

Exhibit 5.3-HR (continued)

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Unless otherwise indicated, statuses reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating sums and differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. High-risk students (approximately 25 percent of both the Academy and the non-Academy groups) have an array of these characteristics associated with the highest likelihood of dropping out.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students.

[1]Students were considered on-time graduates if they graduated in June or earlier of the year they were scheduled to graduate.

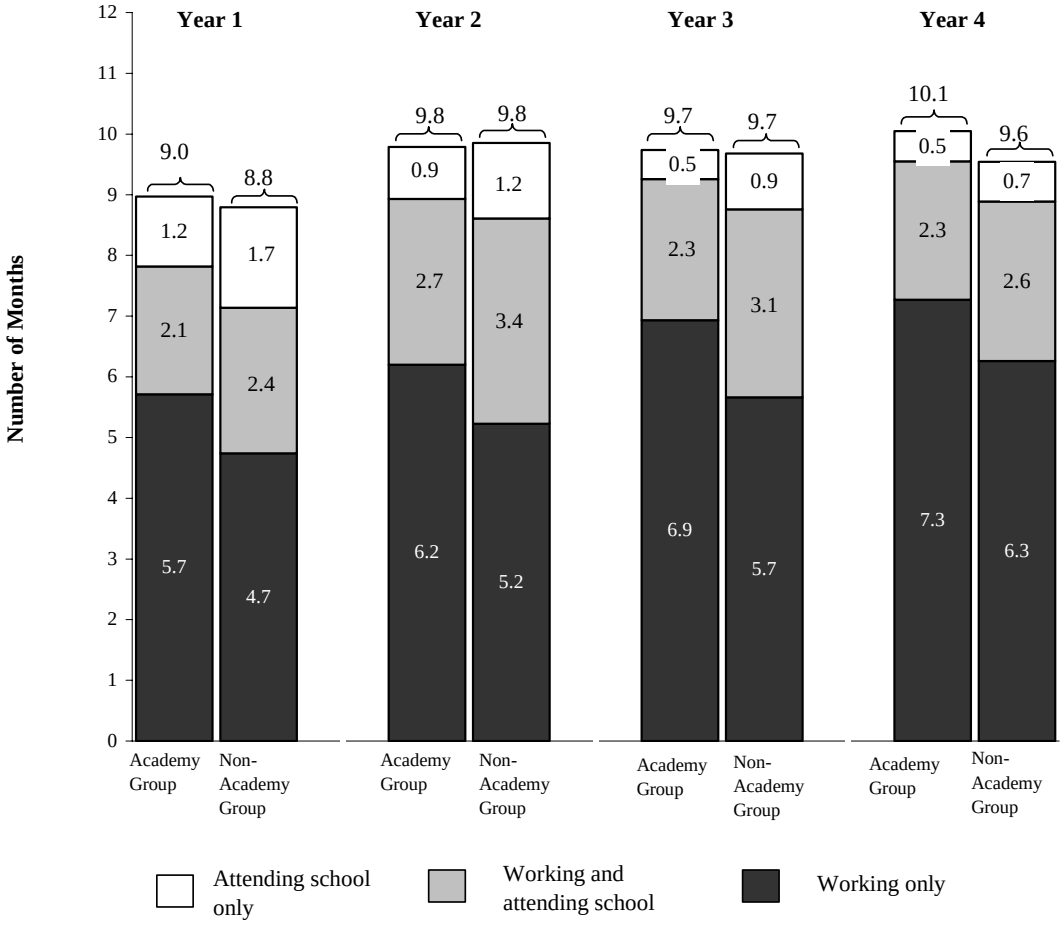
[2]Students must have earned a high school diploma or GED to be considered enrolled in a post-secondary education program.

[4]Years of school completed was calculated by assigning 12 years to a completed high school diploma or GED, 14 years to an associate's or 16 years to a completed bachelor's degree. For those who did not complete an associate's or a bachelor's degree, years of school completed was calculated as 12 plus the percentage of the degree completed through the end of the follow-up period. For those who did not complete a high school diploma or a GED, years of school completed was calculated as a percentage of the 12 years given for a completed high school diploma or a GED.

Career Academies Evaluation

Exhibit 5.4-HR

Year-by-Year Impacts on Months Spent Attending School or Working for the High-Risk Subgroup



SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: All measures reflect the average number of months spent in each status during each year of the 48-month follow-up period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating sums and differences.

A two-tailed t-test was applied to differences between the Academy and non-Academy groups. The difference between total months in any activity in year 4 was significant at .1 or lower.

The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. High-risk students (approximately 25 percent of both the Academy and the non-Academy groups) have an array of these characteristics associated with the highest likelihood of dropping out.

Exhibit 5.5-HR

Impacts on Family Formation, Public Assistance, and Behaviors for the High-Risk Subgroup

Outcome (%)	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Is a parent	48.9	45.0	3.9	8.8	*4.8*
Is a custodial single parent	27.7	22.4	5.3	23.5	*6.4*
Marital Status					
Married	23.3	20.2	3.1	15.4	*3.8*
Single	74.9	76.9	-1.9	-2.5	*-2.4*
Divorced, separated, or widowed	1.7	2.9	-1.2	-40.9	*-1.5*
Lives with parent(s) or guardian(s)	42.3	51.8	-9.5 *	-18.3	*-11.6*
Ever gone without health insurance in past year	30.2	32.8	-2.6	-7.9	*-3.1*
Received TANF or cash assistance in past year	10.4	6.3	4.1	64.1	*4.9*
Received food stamps in the past year	10.5	9.4	1.1	11.7	*1.4*
Registered to vote	63.2	56.7	6.5	11.5	*7.9*
Any recent illegal or drug-related activity[1]	12.6	13.3	-0.7	-5.4	*-0.9*
Sample size (N=360)	206	154			

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Unless otherwise indicated, statuses reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled graduation. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. High-risk students (approximately 25 percent of both the Academy and the non-Academy groups) have an array of these characteristics associated with the highest likelihood of dropping out.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students.

[1]This measure includes illegal drug use in the past 2 weeks, breaking the law (other than traffic violations) in the past 2 weeks, current gang membership, and any arrests or convictions in the past year.

Career Academies Evaluation

Exhibit 5.1-LR

Year-by-Year Impacts on Employment and Earnings for the Low-Risk Subgroup

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Years 1-4					
Ever employed (%)	97.9	96.8	1.2	1.2	*1.6*
Ever employed full-time[1] (%)	92.4	85.6	6.7 **	7.9	*9.1*
Months employed	35.9	36.2	-0.3	-0.8	*-0.4*
Months employed full-time	25.8	24.3	1.6	6.5	*2.1*
Average monthly earnings ($)	1,013.89	987.10	26.78	2.7	*36.13*
Average weekly hours worked	27.7	26.6	1.1	3.9	*1.4*
Average hourly wage ($)	8.95	8.63	0.32	3.8	*0.43*
Total number of jobs held	3.1	3.1	0.0	-0.9	*0.0*
Average job duration, in months	16.2	16.5	-0.2	-1.5	*-0.3*
Year 1					
Ever employed (%)	80.6	85.5	-4.8	-5.7	*-6.5*
Ever employed full-time[1] (%)	60.4	62.7	-2.4	-3.8	*-3.2*
Months employed	7.5	8.1	-0.6	-7.5	*-0.8*
Months employed full-time	5.1	5.3	-0.2	-4.3	*-0.3*
Average monthly earnings ($)	664.38	733.80	-69.42	-9.5	*-93.66*
Average weekly hours worked	21.7	22.9	-1.3	-5.5	*-1.7*
Average hourly wage ($)	6.20	6.45	-0.24	-3.8	*-0.32*
Year 2					
Ever employed (%)	90.6	90.8	-0.2	-0.2	*-0.2*
Ever employed full-time[1] (%)	70.6	69.9	0.7	1.0	*1.0*
Months employed	9.0	9.1	0.0	-0.2	*0.0*
Months employed full-time	6.3	6.1	0.2	3.9	*0.3*
Average monthly earnings ($)	915.76	931.56	-15.80	-1.7	*-21.32*
Average weekly hours worked	27.8	26.9	0.9	3.5	*1.3*
Average hourly wage ($)	7.50	7.67	-0.17	-2.3	*-0.23*
Year 3					
Ever employed (%)	92.1	90.4	1.7	1.9	*2.3*
Ever employed full-time[1] (%)	79.0	72.5	6.5	8.9	*8.7*
Months employed	9.6	9.3	0.3	3.3	*0.4*
Months employed full-time	7.2	6.2	0.9	14.6	*1.2*
Average monthly earnings ($)	1,150.24	1,062.94	87.30	8.2	*117.78*
Average weekly hours worked	30.8	28.2	2.6	9.3	*3.5*
Average hourly wage ($)	8.67	8.32	0.35	4.2	*0.47*
Sample size (N=376)	208	168			

(continued)

Exhibit 5.1-LR (continued)

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Year 4					
Ever employed (%)	92.2	91.8	0.4	0.4	*0.5*
Ever employed full-time[1] (%)	78.1	70.7	7.5	10.6	*10.1*
Months employed	9.8	9.7	0.0	0.2	*0.0*
Months employed full-time	7.5	6.7	0.8	11.3	*1.0*
Average monthly earnings ($)	1,331.53	1,228.70	102.82	8.4	*138.72*
Average weekly hours worked	30.8	28.8	2.0	6.8	*2.6*
Average hourly wage ($)	9.84	9.36	0.48	5.1	*0.65*
Last Quarter					
Ever employed (%)	85.4	85.3	0.1	0.1	*0.2*
Ever employed full-time[1] (%)	66.7	63.8	2.9	4.5	*3.9*
Months employed	2.5	2.5	-0.1	-2.2	*-0.1*
Months employed full-time	1.9	1.8	0.1	3.7	*0.1*
Average monthly earnings ($)	1,395.55	1,326.93	68.62	5.2	*92.58*
Average weekly hours worked	31.0	30.3	0.6	2.0	*0.8*
Average hourly wage ($)	9.45	9.00	0.46	5.1	*0.62*
Sample size (N=376)	208	168			

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. Low-risk students (approximately 25 percent of both the Academy and the non-Academy groups) have an array of these characteristics associated with the lowest likelihood of dropping out.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students. See Exhibit 3.6 for the percentage of the Academy and the non-Academy group ever enrolled in a Career Academy.

Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

Respondents reported their ending or most recent wages and hours worked for each job. This rate was assumed to apply to the entire duration of the job. Thus, if wages or hours were lower at the beginning of each job, these measures may overestimate true average wages and earnings.

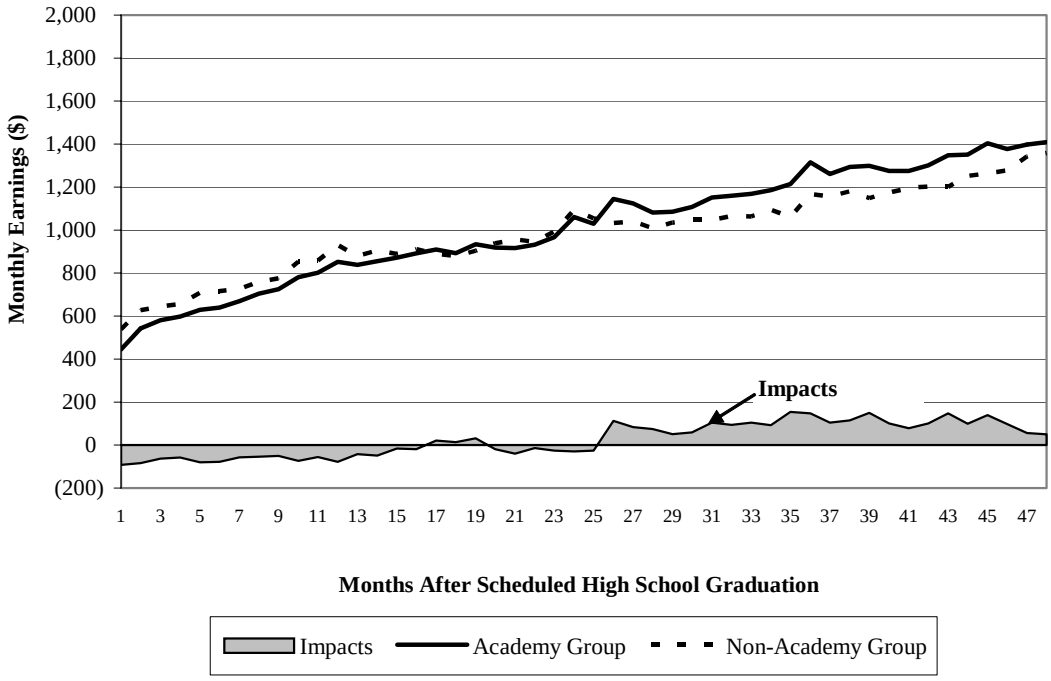
For respondents who were never employed during a given month, earnings, hours, and wages are included in these averages as zeros.

[1]Students were considered employed full-time if they reported working 30 or more hours per week.

Career Academies Evaluation

Exhibit 5.2-LR

Month-by-Month Impacts on Average Earnings for the Low-Risk Subgroup



SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Differences in monthly earnings are significant at the .10 level or lower in 37 out of the 48 months studied.

The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. Low-risk students (approximately 25 percent of both the Academy and the non-Academy groups) have an array of these characteristics associated with the lowest likelihood of dropping out. Percent change is defined as the impact divided by the non-Academy group average.

Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

Respondents reported their ending wage at each job, and this rate was assumed to apply to the entire duration of the job. Thus, if wages or hours were lower at the beginning of each job, these measures may overestimate true average earnings.

For respondents who were never employed during a given month, earnings are included in these averages as zeros.

Career Academies Evaluation

Exhibit 5.3-LR

Impacts on Educational Attainment for the Low-Risk Subgroup

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Ever enrolled in a Career Academy during high school (%)	86.0	11.9	74.1 ***	--	--
Was enrolled in a Career Academy at the end of scheduled grade 12 (%)	65.3	10.3	55.1 ***	--	--
High school completion status (%)					
Earned high school diploma or GED	100.0	99.4	0.6	0.6	*0.8*
Earned high school diploma	94.9	97.5	-2.6	-2.7	*-3.5*
On-time graduate[1]	89.2	91.1	-1.9	-2.1	*-2.6*
Late graduate	5.7	6.4	-0.7	-10.9	*-0.9*
Earned a GED	5.0	1.8	3.2	174.8	*4.3*
Post-secondary education enrollment[2] (%)					
Ever enrolled in post-secondary education	93.7	91.4	2.3	2.6	*3.1*
Highest post-secondary education enrollment					
Four-year college	46.9	47.0	-0.1	-0.3	*-0.2*
Two-year college	37.8	34.7	3.0	8.8	*4.1*
Skills training, technical or trade school	9.0	9.5	-0.5	-4.8	*-0.6*
Months enrolled in post-secondary education	30.2	31.5	-1.3	-4.0	*-1.7*
Highest credential completed or in progress[3] (%)					
Any post-secondary credential	68.0	69.1	-1.1	-1.6	*-1.5*
Completed	25.9	23.8	2.2	9.1	*2.9*
In progress	42.1	45.5	-3.4	-7.5	*-4.6*
Bachelor's degree	31.6	37.8	-6.1	-16.2	*-8.3*
Completed	6.8	4.2	2.5	59.6	*3.4*
In progress	24.8	33.5	-8.7 *	-25.9	*-11.7*
Associate's degree	22.0	16.3	5.6	34.4	*7.6*
Completed	7.6	5.5	2.1	37.3	*2.8*
In progress	14.0	10.7	3.3	31.2	*4.5*
Skills training certificate or license	14.9	15.2	-0.3	-1.9	*-0.4*
Completed	11.5	13.8	-2.3	-16.7	*-3.1*
In progress	3.3	1.3	2.0	155.3	*2.7*
Years of schooling completed[4]	13.3	13.4	-0.1	-0.4	*-0.1*
Sample size (N=376)	208	168			

(continued)

Exhibit 5.3-LR (continued)

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Unless otherwise indicated, statuses reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating sums and differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. Low-risk students (approximately 25 percent of both the Academy and the non-Academy groups) have an array of these characteristics associated with the lowest likelihood of dropping out.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students.

[1]Students were considered on-time graduates if they graduated in June or earlier of the year they were scheduled to graduate.

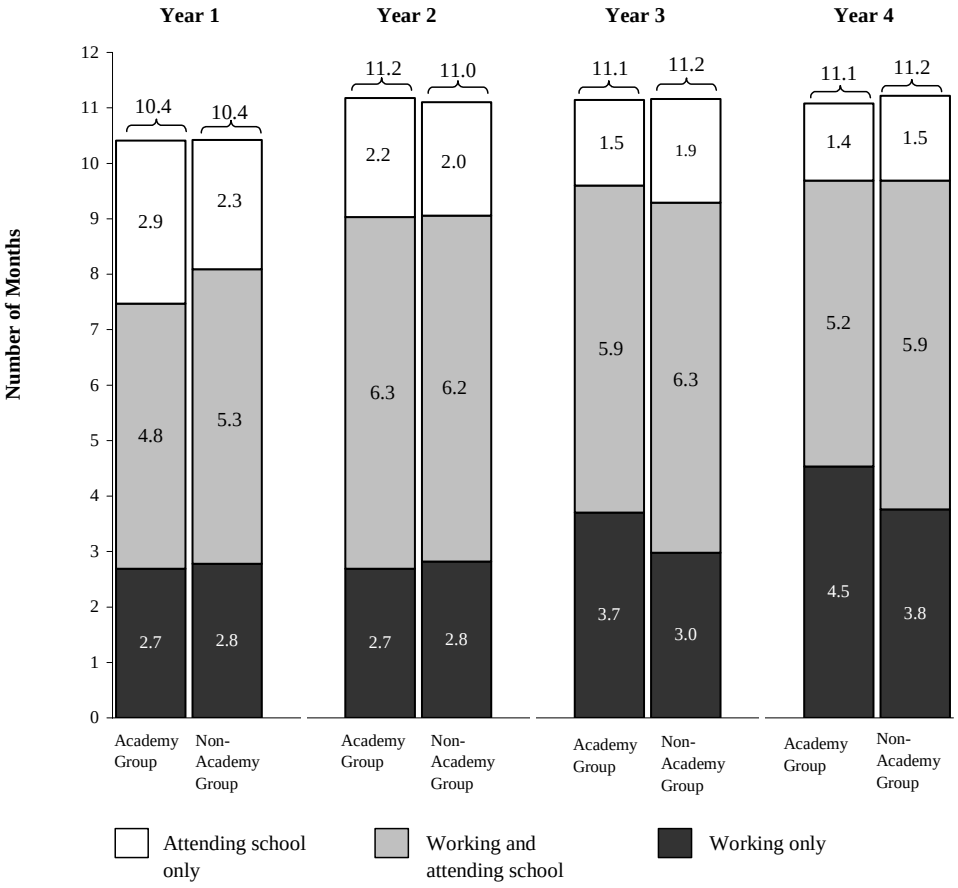
[2]Students must have earned a high school diploma or GED to be considered enrolled in a post-secondary education program.

[4]Years of school completed was calculated by assigning 12 years to a completed high school diploma or GED, 14 years to an associate's or 16 years to a completed bachelor's degree. For those who did not complete an associate's or a bachelor's degree, years of school completed was calculated as 12 plus the percentage of the degree completed through the end of the follow-up period. For those who did not complete a high school diploma or a GED, years of school completed was calculated as a percentage of the 12 years given for a completed high school diploma or a GED.

Career Academies Evaluation

Exhibit 5.4-LR

Year-by-Year Impacts on Months Spent Attending School or Working for the Low-Risk Subgroup



SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: All measures reflect the average number of months spent in each status during each year of the 48-month follow-up period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating sums and differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. The difference between total months in any activity in year 4 was significant at .1 or lower.

The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. Low-risk students (approximately 25 percent of both the Academy and the non-Academy groups) have an array of these characteristics associated with the lowest likelihood of dropping out.

Career Academies Evaluation

Exhibit 5.5-LR

Impacts on Family Formation, Public Assistance, and Behaviors for the Low-Risk Subgroup

Outcome (%)	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Is a parent	27.2	18.7	8.5 *	45.3	*11.5*
Is a custodial single parent	14.4	10.2	4.2	40.5	*5.6*
Marital Status					
Married	17.6	15.6	2.0	12.6	*2.7*
Single	78.2	82.0	-3.8	-4.6	*-5.1*
Divorced, separated, or widowed	4.3	2.5	1.8	74.3	*2.5*
Lives with parent(s) or guardian(s)	51.9	57.3	-5.4	-9.5	*-7.3*
Ever gone without health insurance in past year	27.2	27.8	-0.5	-2.0	*-0.7*
Received TANF or cash assistance in past year	4.2	2.6	1.6	63.2	*2.2*
Received food stamps in the past year	6.4	5.2	1.2	22.2	*1.6*
Registered to vote	67.0	65.5	1.5	2.3	*2.0*
Any recent illegal or drug-related activity[1]	4.1	1.5	2.7	181.0	*3.6*
Sample size (N=376)	208	168			

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Unless otherwise indicated, statuses reflect a 48-month period ending in June of 2000, 2001, or 2002 the fourth year following scheduled graduation. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. Low-risk students (approximately 25 percent of both the Academy and the non-Academy groups) have an array of these characteristics associated with the lowest likelihood of dropping out.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students.

[1]This measure includes illegal drug use in the past 2 weeks, breaking the law (other than traffic violations) in the past 2 weeks, current gang membership, and any arrests or convictions in the past year.

Career Academies Evaluation

Exhibit 5.1-MR

Year-by-Year Impacts on Employment and Earnings for the Medium-Risk Subgroup

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Years 1-4					
Ever employed (%)	98.8	97.6	1.2	1.2	*1.4*
Ever employed full-time[1] (%)	95.9	94.6	1.4	1.5	*1.7*
Months employed	37.4	35.5	1.9 *	5.3	*2.3*
Months employed full-time	30.5	28.3	2.2 *	7.6	*2.6*
Average monthly earnings ($)	1,171.31	1,030.08	141.23 **	13.7	*170.59*
Average weekly hours worked	31.1	28.6	2.5 **	8.7	*3.0*
Average hourly wage ($)	9.22	8.69	0.53 **	6.1	*0.64*
Total number of jobs held	3.1	3.2	0.0	-1.0	*0.0*
Average job duration, in months	16.0	15.5	0.5	3.4	*0.6*
Year 1					
Ever employed (%)	89.1	81.3	7.7 ***	9.5	*9.3*
Ever employed full-time[1] (%)	74.0	67.3	6.7 *	9.9	*8.1*
Months employed	8.4	7.6	0.8 **	11.0	*1.0*
Months employed full-time	6.2	5.7	0.5	8.6	*0.6*
Average monthly earnings ($)	855.99	704.75	151.24 ***	21.5	*182.68*
Average weekly hours worked	26.3	23.2	3.1 **	13.4	*3.7*
Average hourly wage ($)	7.15	6.04	1.11 ***	18.4	*1.34*
Year 2					
Ever employed (%)	92.0	91.7	0.3	0.3	*0.4*
Ever employed full-time[1] (%)	81.2	78.4	2.8	3.5	*3.3*
Months employed	9.5	9.0	0.5	5.4	*0.6*
Months employed full-time	7.6	7.1	0.6	8.0	*0.7*
Average monthly earnings ($)	1,128.96	964.71	164.25 **	17.0	*198.39*
Average weekly hours worked	31.4	28.9	2.5 *	8.6	*3.0*
Average hourly wage ($)	8.08	7.60	0.49 *	6.4	*0.59*
Year 3					
Ever employed (%)	93.9	91.5	2.4	2.6	*2.9*
Ever employed full-time[1] (%)	84.2	79.8	4.5	5.6	*5.4*
Months employed	9.6	9.5	0.2	2.0	*0.2*
Months employed full-time	8.2	7.6	0.6 *	8.3	*0.8*
Average monthly earnings ($)	1,278.19	1,152.52	125.67	10.9	*151.79*
Average weekly hours worked	33.2	31.0	2.2	7.0	*2.6*
Average hourly wage ($)	8.86	8.32	0.54 *	6.5	*0.65*
Sample size (N=722)	385	337			

(continued)

Exhibit 5.1-MR (continued)

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Year 4					
Ever employed (%)	91.7	92.3	-0.7	-0.7	*-0.8*
Ever employed full-time[1] (%)	85.8	83.1	2.7	3.3	*3.3*
Months employed	9.8	9.5	0.4	3.8	*0.4*
Months employed full-time	8.4	8.0	0.5	5.8	*0.6*
Average monthly earnings ($)	1,421.97	1,301.85	120.11	9.2	*145.08*
Average weekly hours worked	33.5	31.4	2.2	6.9	*2.6*
Average hourly wage ($)	9.64	9.42	0.22	2.3	*0.27*
Last Quarter					
Ever employed (%)	84.0	82.6	1.4	1.7	*1.7*
Ever employed full-time[1] (%)	75.6	71.2	4.4	6.2	*5.3*
Months employed	2.4	2.4	0.0	1.1	*0.0*
Months employed full-time	2.1	2.0	0.1	4.4	*0.1*
Average monthly earnings ($)	1,464.00	1,394.51	69.49	5.0	*83.94*
Average weekly hours worked	33.1	31.7	1.4	4.3	*1.7*
Average hourly wage ($)	9.34	9.00	0.33	3.7	*0.40*
Sample size (N=722)	385	337			

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. Medium-risk students (approximately 50 percent of both the Academy and the non-Academy groups) have an array of these characteristics associated with neither a particularly low nor particularly high likelihood of dropping out.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students. See Exhibit 3.6 for the percentage of the Academy and the non-Academy group ever enrolled in a Career Academy.

Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

Respondents reported their ending or most recent wages and hours worked for each job. This rate was assumed to apply to the entire duration of the job. Thus, if wages or hours were lower at the beginning of each job, these measures may overestimate true average wages and earnings.

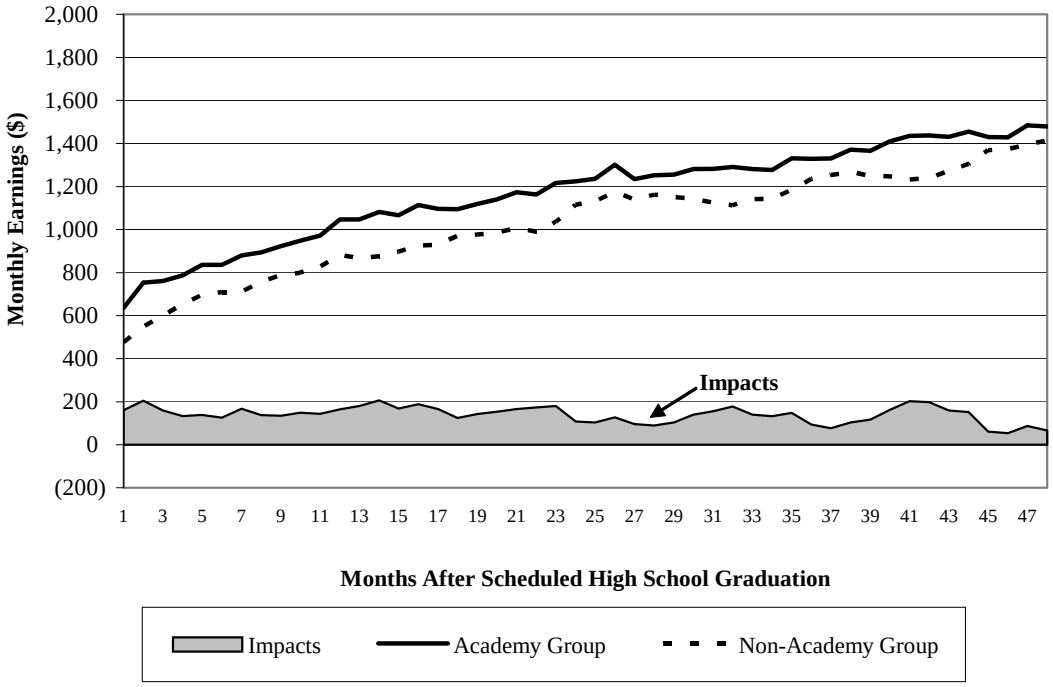
For respondents who were never employed during a given month, earnings, hours, and wages are included in these averages as zeros.

[1]Students were considered employed full-time if they reported working 30 or more hours per week.

Career Academies Evaluation

Exhibit 5.2-MR

Month-by-Month Impacts on Average Earnings for the Medium-Risk Subgroup



SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Measures reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Differences in monthly earnings are significant at the .10 level or lower in 37 out of the 48 months studied.

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Respondents directly reported hours worked per week, weeks worked per month, and hourly wages. Earnings were calculated for each month by multiplying the wage by the hours worked times the number of weeks worked in that month. The maximum number of weeks in each month was capped at 4.

Respondents reported their ending wage at each job, and this rate was assumed to apply to the entire duration of the job. Thus, if wages or hours were lower at the beginning of each job, these measures may overestimate true average earnings.

For respondents who were never employed during a given month, earnings are included in these averages as zeros.

Career Academies Evaluation

Exhibit 5.3-MR

Impacts on Educational Attainment for the Medium-Risk Subgroup

Outcome	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Ever enrolled in a Career Academy during high school (%)	88.8	6.0	82.8 ***	--	--
Was enrolled in a Career Academy at the end of scheduled grade 12 (%)	55.9	3.2	52.7 ***	--	--
High school completion status (%)					
Earned high school diploma or GED	92.9	92.1	0.7	0.8	*0.9*
Earned high school diploma	82.0	85.2	-3.3	-3.8	*-3.9*
On-time graduate[1]	74.2	74.0	0.2	0.3	*0.3*
Late graduate	7.7	11.2	-3.5	-31.0	*-4.2*
Earned a GED	10.8	6.9	3.9 *	56.8	*4.7*
Post-secondary education enrollment[2] (%)					
Ever enrolled in post-secondary education	80.1	79.2	1.0	1.2	*1.2*
Highest post-secondary education enrollment					
Four-year college	22.5	22.9	-0.4	-1.9	*-0.5*
Two-year college	43.3	36.7	6.6 *	18.0	*8.0*
Skills training, technical or trade school	14.6	19.7	-5.1 *	-25.8	*-6.2*
Months enrolled in post-secondary education	22.3	20.6	1.7	8.4	*2.1*
Highest credential completed or in progress[3] (%)					
Any post-secondary credential	56.0	55.3	0.7	1.3	*0.9*
Completed	26.3	30.8	-4.5	-14.6	*-5.4*
In progress	29.9	24.9	5.1	20.4	*6.1*
Bachelor's degree	14.2	13.0	1.1	8.7	*1.4*
Completed	0.7	3.3	-2.6 **	-77.9	*-3.1*
In progress	13.4	9.8	3.6	37.0	*4.4*
Associate's degree	19.8	17.2	2.6	15.2	*3.2*
Completed	5.8	4.7	1.1	23.9	*1.3*
In progress	14.1	12.6	1.5	12.1	*1.8*
Skills training certificate or license	21.9	25.0	-3.1	-12.4	*-3.8*
Completed	19.6	22.6	-3.0	-13.3	*-3.6*
In progress	2.3	2.4	-0.1	-4.8	*-0.1*
Years of schooling completed[4]	12.6	12.6	0.0	0.2	*0.0*
Sample size (N=722)	385	337			

(continued)

Exhibit 5.3-MR (continued)

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Unless otherwise indicated, statuses reflect a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating sums and differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. Medium-risk students (approximately 50 percent of both the Academy and the non-Academy groups) have an array of these characteristics associated with neither a particularly low nor a particularly high likelihood of dropping out.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students.

[1]Students were considered on-time graduates if they graduated in June or earlier of the year they were scheduled to graduate.

[2]Students must have earned a high school diploma or GED to be considered enrolled in a post-secondary education program.

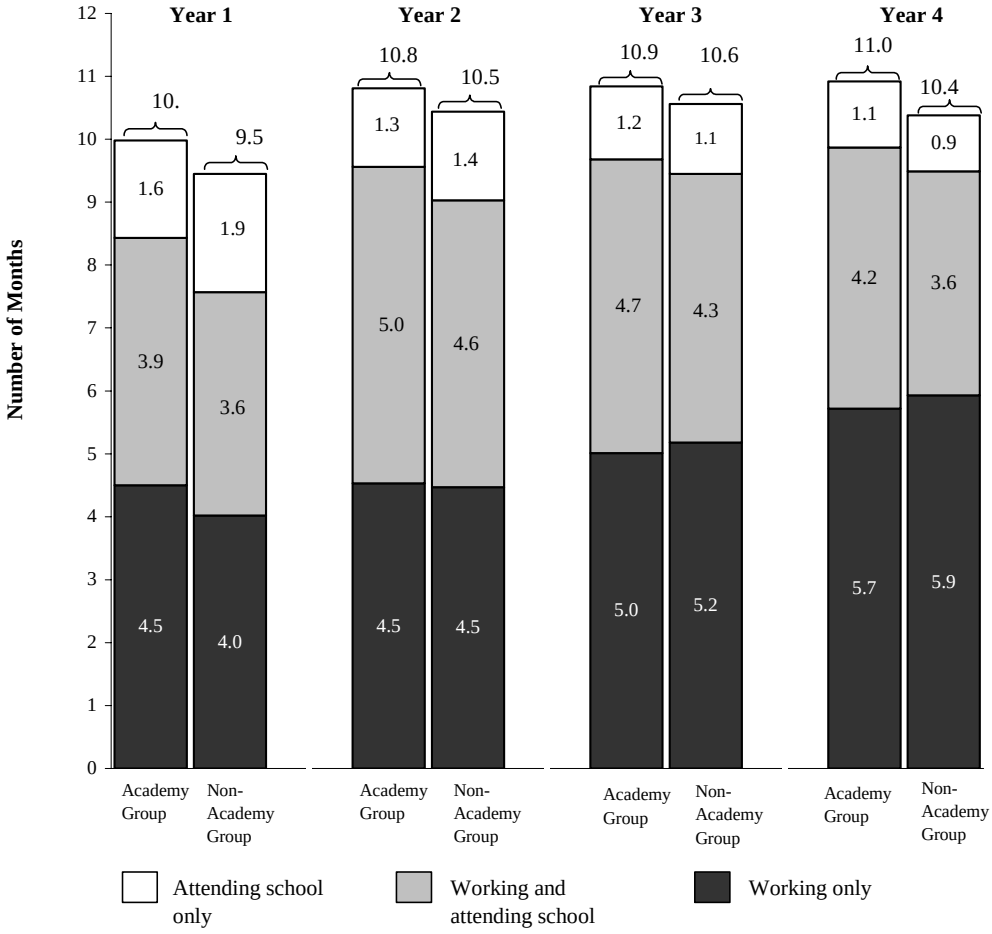
[3]A credential was considered "in progress" if the student reported attempting it in a program that he/she was currently attending (within three months of the end of the follow-up period) and expected to complete.

[4]Years of school completed was calculated by assigning 12 years to a completed high school diploma or GED, 14 years to an associate's or 16 years to a completed bachelor's degree. For those who did not complete an associate's or a bachelor's degree, years of school completed was calculated as 12 plus the percentage of the degree completed through the end of the follow-up period. For those who did not complete a high school diploma or a GED, years of school completed was calculated as a percentage of the 12 years given for a completed high school diploma or a GED.

Career Academies Evaluation

Exhibit 5.4-MR

Year-by-Year Impacts on Months Spent Attending School or Working for the Medium-Risk Subgroup



SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: All measures reflect the average number of months spent in each status during each year of the 48-month follow-up period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation for each sample member. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating sums and differences.

A two-tailed t-test was applied to differences between the Academy and non-Academy groups. The difference between total months in any activity in year 4 was significant at .1 or lower.

The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. Medium-risk students (approximately 50 percent of both the Academy and the non-Academy groups) have an array of these characteristics associated with neither a particularly low nor a particularly high likelihood of dropping out.

Exhibit 5.5-MR

Impacts on Family Formation, Public Assistance, and Behaviors for the Medium-Risk Subgroup

Outcome (%)	Academy Group	Non-Academy Group	Impact	Percent Change	*Impact per Enrollee*
Is a parent	34.7	37.3	-2.6	-7.0	*-3.1*
Is a custodial single parent	16.9	18.0	-1.1	-6.3	*-1.4*
Marital Status					
Married	19.1	20.4	-1.4	-6.7	*-1.7*
Single	77.5	77.3	0.3	0.3	*0.3*
Divorced, separated, or widowed	3.3	2.1	1.2	57.6	*1.5*
Lives with parent(s) or guardian(s)	49.4	49.9	-0.6	-1.1	*-0.7*
Ever gone without health insurance in past year	27.0	33.4	-6.5 *	-19.3	*-7.8*
Received TANF or cash assistance in past year	7.2	7.3	-0.1	-0.8	*-0.1*
Received food stamps in the past year	11.3	8.7	2.6	30.3	*3.2*
Registered to vote	67.2	67.7	-0.6	-0.8	*-0.7*
Any recent illegal or drug-related activity[1]	5.1	4.7	0.4	9.3	*0.5*
Sample size (N=722)	385	337			

SOURCE: MDRC calculations from the Career Academies Evaluation Four-Year Post-High School Follow-Up Survey Database.

NOTES: Unless otherwise indicated, statuses were reported for the end of a 48-month period ending in June of 2000, 2001, or 2002: the fourth year following scheduled high school graduation. Estimates are regression-adjusted using maximum likelihood estimation, controlling for background characteristics. Standard errors are adjusted to account for the clustering of students within schools and random assignment years. Rounding may cause slight discrepancies in calculating differences. A two-tailed t-test was applied to differences between the Academy and non-Academy groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

The definition of risk subgroups involved identifying background characteristics that best predicted dropping out among students in the non-Academy group. Medium-risk students (approximately 50 percent of both the Academy and the non-Academy groups) have an array of these characteristics associated with neither a particularly low nor a particularly high likelihood of dropping out.

Percent change is the impact divided by the non-Academy group average.

Impact per enrollee is defined as the impact divided by the difference in the percentage of Academy and non-Academy group members ever enrolled in a Career Academy. It is italicized because its calculation does not involve a direct comparison of Academy and non-Academy students. See Exhibit 3.6.

[1]This measure includes illegal drug use in the past 2 weeks, breaking the law (other than traffic violations) in the past 2 weeks, current gang membership, and any arrests or convictions in the past year.