

Executive Summary

Career Academies

Early Implementation Lessons from a 10-Site Evaluation

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MDRC

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PREFACE

There is wide agreement that large numbers of youth are leaving high school poorly equipped for a productive future, at enormous personal and societal cost. Research conducted by MDRC and others shows that many short-term interventions and dropout recovery programs have met with little success in addressing these problems. In recent years, high schools and employers have been called upon to collaborate in developing and implementing more comprehensive initiatives linking school and work. Under the aegis of the growing “school-to-work” movement, the federal government, states, and local school districts are supporting the efforts of high schools and employers. The result has been the development of an array of approaches aimed at helping high school students achieve academically, while providing them with marketable skills, work-based learning experiences, and clearer pathways to productive employment. In 1994, MDRC documented the early findings and lessons from 16 pioneering school-to-work programs in *Home-Grown Lessons: Innovative Programs Linking Work and High School*. This effort shed light on the accomplishments of these promising education reforms.

One important outgrowth of this research is the Career Academies Evaluation—a study made possible by the strong commitment and cooperation of the 16 Career Academies Evaluation funders and all those associated with the 10 sites. The choice of Career Academies as the subject of MDRC’s first major education evaluation reflects in part their potential for improving the lives of large numbers of youth and their significance as harbingers of broader reform in education.

Career Academies embrace the key principles of the school-to-work movement by integrating academic and vocational instruction, providing work-based learning opportunities for students, and preparing students for post-secondary education, employment, or a combination of both. The Academies also reflect key principles of broader school reform initiatives by restructuring high schools into smaller, more personalized schools, providing teachers with more influence over their work through decentralized management, and engaging in interdisciplinary curriculum development. While Career Academies have existed for more than 25 years, the past three years have seen an extraordinary growth in their expansion across the country. MDRC believes that the study can set a precedent for the effective use of evaluations to shape critical initiatives in education and to increase support for innovations that are proved to be effective.

This report provides an overview of the foundation that has been laid for the study and is the first of several that will present results from the Career Academies Evaluation. It describes the 10 Career Academies participating in the study and concludes that each has implemented and sustained the defining structural elements of the Career Academy approach and has distinguished itself from the alternatives available to students in the comprehensive high school in which it operates. The report also shows the flexibility of the Career Academy approach and how it can be adapted to meet local needs and circumstances. It describes the characteristics and educational backgrounds of students who applied to the Career Academies and shows that the programs attract a range of students, including those who have done well in school and those who appear to be at risk of dropping out. Finally, the report provides some preliminary insights into the ways that teachers use the Career Academies to enhance their work with each other and with their students. It also highlights differences in the ways Academy and non-Academy teachers perceive their work environment. We believe the study establishes the framework for a rigorous and credible assessment of the Career Academy approach and its impact on students’ high school

performance and preparation for further education and employment.

Having established the foundation for the study, MDRC is continuing the data collection and analysis activities that will be the basis of the project's primary reports and papers for policymakers, practitioners, and researchers over the next three years. Future reports will show how Career Academy students perform on a wide range of education outcomes compared to a control group of non-Academy students. MDRC also hopes to begin work on the second phase of the study, which will follow students beyond their high school years to measure effects on their enrollment in post-secondary education and on their employment and earnings.

Judith M. Gueron
President

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The Career Academies Evaluation is the product of a collaboration among MDRC and the participating Career Academies, high schools, and school districts. First, we would like to extend special thanks to the lead teachers, directors, and other administrators who oversee and support the participating Career Academies in their capacities in the high schools and school districts, including: Alexandra Penn, Richard K. Blake, Ruth Fountain, Deborah Donovan, and Carolyn Davis (Academy for Aerospace Technology, Cocoa High School, Cocoa, Florida); Kathleen Floyd, Stanley Holmes, Leewood Macer, and Betsy Banks (Academy of Finance, Lake Clifton/Eastern High School, Baltimore, Maryland); Lupe Ferran Diaz, William Renuart, Ann Fields, Julie Jared, Judy Marty, and Alivia Mingel (Academy of Travel and Tourism, Miami Beach Senior High School, Miami Beach, Florida); Joyce Beckley, John Plavetich, Lester Young, Eunice Anderson, Joseph Poerio, Janet Bell, and Bernard Manning (Business and Finance Academy, George Westinghouse High School, Pittsburgh, Pennsylvania); Blair Barbour, Lisa Vieler, John Sellarole, Julia Lawrence, Tom Key, and Geraldine Padilla (Electronics Academy, Independence High School, San Jose, California); Robert Ocano, Rafael Renteria, Dot Westerhoff, and Traci Holland (Electronics Academy, Silver Creek High School, San Jose, California); Keith Bush, Linda Scannell, and Leilani Roth (Electronics Academies of East Side Union High School District, San Jose, California); Sheldon Eskow, Robert Nelson, Joan Lucero, Dr. Joseph Tafoya, and Jean Fietze (Global Business Academy, Valley High School, Santa Ana, California); Jan Kehoe, Nancy Sochat, Michael Quatrini, Carl Cooper, and Allen Long (Health Professions Academy, Socorro High School, Socorro, Texas); Howard Brown, Susan Thomas, Stephen Wesley, and Shana Epstein (Public Service Academy, Anacostia Senior High School, Washington, D.C.); and John Burdick, Pat Johns, Lorraine Sandoval-Vigil, Lisa Udell, and Virginia Rico (Watsonville Video Academy, Watsonville High School, Watsonville, California).

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Academy for Aerospace Technology

(Cocoa, Florida)

James Andrews
 Gilbert Burlew
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 Debbie Ocker
 Kendra Sisserson

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 Yvonne Brown
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 Rey Delgado
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 Joyce Beckley
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 Melanie Humphrey
 Carolyn Olasewere
 Gloria Spencer

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Blair Barbour
 Bruce Berg
 Jan Bowen
 Gerry Herrick
 Dan Sanchez
 Lisa Vieler

Electronics Academy
(Silver Creek High School, San Jose, California)

Gina Campanella
 Diana Howe
 Bob Ocano
 Frank Slayton
 Mary Summers

Global Business Academy
(Santa Ana, California)

Mark Bartholio
 Lamberto Castillo
 Nancy Dervis
 Sheldon Eskow
 Charlotte Griswold
 Jeff Hittenberger
 Sheri McDonald
 Danielle Yorko

Health Professions Academy

(Socorro, Texas)

Roberta Carson
 Kenny Collins
 Chris Elliott
 Paul Harrington
 Jim Hinz
 Jan Kehoe
 Larry Mladek
 Suzanne Palmer
 Don Patin
 Celeste Sevcik
 Nancy Sochat
 Vera Villa
 Ashley Wilson

Public Service Academy
(Washington, D.C.)

Angela Benjamin
 Frank Briscoe
 James Dickson
 Mary Doyle
 Darryl McDuffie
 Jeanne Montague
 Michael Moore
 Blanch Newton
 Lynn Poe
 Phyllis Samuels
 Susan Thomas
 Anthony Umelo

Watsonville Video Academy
(Watsonville, California)

John Burdick
 Scott Correa-Mickel
 Richard Hardy
 Diane Hickok
 Chris Kopecky
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 Huve Rivas

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The Authors

EXECUTIVE SUMMARY

Critics of America's education system contend that young people are leaving high schools without the preparation they need for good jobs: ones that pay well, provide benefits, and offer opportunity for advancement. Economic prospects for high school dropouts are especially grim; they can expect to earn about half as much as graduates with some post-high school education. Increasingly, today's labor market places a premium on such abilities as hands-on problem-solving, technical knowledge, and effective teamwork, yet such skills are rarely taught in large comprehensive high schools. In fact, fewer than half the youth in the United States acquire the skills and knowledge required for meaningful and productive work in today's labor market, according to the Department of Labor Secretary's Commission on Achieving Necessary Skills (SCANS).

SCANS, and numerous reports from researchers and blue-ribbon panels, have heightened the call from policymakers, educators, and the business community for innovative responses to these problems. Often referred to as "school-to-work transition" reforms, these efforts aim to help high school students achieve academically, while providing them with marketable skills, work-based learning experiences, and clearer pathways to post-secondary education and productive employment. One of the best-established and most promising school-to-work approaches is the Career Academy.

Career Academies are one of several school-to-work approaches specifically authorized under the School-to-Work Opportunities Act of 1994, a major milestone in the school-to-work movement. The Career Academies are "schools-within-schools" in which groups of students (usually 30 to 60 per grade in grades 9 through 12 or 10 through 12) take several classes together each year with the same group of teachers. The Academies focus on a career theme, such as health, business and finance, or electronics, which is usually determined by local employment opportunities and evidence of growing demand for such expertise in the marketplace. Career Academies' curricula consist of traditional academic classes (such as math, English, science, and social studies) combined with occupation-related classes that focus on the career theme. Local employers from that field help plan and guide the program, and they serve as mentors and provide work experience for the students.

A growing number of states and school districts are beginning to invest in new Career Academies and are looking for evidence of their effectiveness and for information about how they can be implemented and sustained. To meet this need, the Manpower Demonstration Research Corporation (MDRC) is conducting a unique evaluation of the Academy approach. The evaluation will provide a rigorous and credible assessment of the extent to which the Academy approach improves students' engagement and performance in high school, as well as their preparation for further education and employment beyond high school. The evaluation includes 10 high schools and the Career Academies that operate within them. The Academies are located in a diverse set of urban and small-city high schools that serve high proportions of low-income students, students of color, and students with limited English proficiency. The evaluation is being supported by a consortium of funders, including the U.S. Departments of Education and Labor and 14 private foundations: the DeWitt Wallace-Reader's Digest Fund, Ford Foundation, Commonwealth Fund, William T. Grant Foundation, Pew Charitable Trusts, Rockefeller Foundation, George Gund Foundation, Grable Foundation, Richard King Mellon Foundation, American Express Foundation, Alcoa Foundation, Russell Sage Foundation, Westinghouse

Foundation, and Bristol-Myers Squibb Foundation.

This is the first report on the Career Academies Evaluation. It includes several preliminary findings that have important implications both for the evaluation and for policy and practice related to the Career Academies and other school-to-work approaches. Later reports will include additional analyses of how the Career Academies operate and will examine students' and teachers' experiences in the Academy and non-Academy high school environments. These reports will also include findings on the extent to which the Academies improve education and work-related outcomes for students.

Key Findings in Brief

Field research, interviews, and surveys revealed several significant findings about the Career Academies in this evaluation. These findings are summarized here and discussed in more detail below.

- All 10 of the participating high schools implemented and sustained the demanding structural elements of the Academy approach: a school-within-a-school, a curriculum that combines academic and occupation-related courses oriented toward a career theme, and partnerships with local employers. This finding shows that the evaluation can provide a valid test of the effectiveness of the Career Academy approach as it exists in a range of high schools.
- The participating Career Academies vary in ways that underscore their adaptability to each school's needs and circumstances, demonstrating that the approach can be implemented in a wide range of school settings.
- The participating Career Academies have attracted large numbers of applicants with a high degree of demographic and educational diversity. Their broad appeal extends to students who are at risk of performing poorly or of dropping out of school, as well as to students who do well in school.
- A large majority of the students who were selected to participate in the Career Academies enrolled in them (84 percent), and three-quarters of those who enrolled were still participating two years later. Given the high rate of school transfers among similar, non-Academy students, these rates of enrollment and retention should be viewed as substantial.
- Compared to their colleagues who do not teach Academy classes, Career Academy teachers report having more opportunities to collaborate with each other, are more likely to see their environment as a learning community, and are more likely to develop more personalized relationships with their students. There is considerable evidence that these changes contribute to the quality of teaching and learning within high schools.

What Is a Career Academy?

Creating a Career Academy requires establishing a new structural framework that is not found in most high schools to change the way teaching and learning occur. The essential structural features of the Career Academy approach are those that alter the organization of classes within a high school, modify the official curriculum, and establish new links between the high school and local employers. Table ES-1 lists the defining characteristics of the Academy structures: the school-within-a-school organization, the career-oriented academic and occupational curriculum, and employer partnerships. These structural features are shared by all the Career Academies in the evaluation.

Table ES-1
The Career Academies Evaluation
Shared Characteristics of the Participating Career Academies

School-Within-a-School Organization	Combined Academic/Occupational Curriculum	Employer Partnerships
<ul style="list-style-type: none"> • Clusters of students who share several classes each day and have some of the same teachers from year to year. • Clusters of teachers from academic and vocational disciplines who are scheduled to have mostly Academy students in their classes, who make a commitment to meeting with each other on a regular basis, and who share in decision-making related to administrative policies, curriculum content, and instruction. • A teacher or director who assumes lead responsibility for administrative tasks and usually serves as a liaison to the school principal and other building administrators, school district officials, and employer partners. 	<ul style="list-style-type: none"> • Academic courses that meet high school graduation and college entrance requirements, and occupation-related courses that focus on the career theme. • Shared planning time for Academy teachers to coordinate course content and instructional strategies. • Employability skills that are taught in the vocational courses and in one or more academic courses. • Work-based learning opportunities for students that link classroom activities to work internships with local employer partners. • Career and college counseling to inform students about options and planning for further education and employment. 	<ul style="list-style-type: none"> • An advisory group that includes representatives from the local employer community, the Career Academy, and the school district. • A coordinator who serves as the liaison between employers, the Career Academy, and the school district. • An internship program that combines school- and work-based supervision and learning. • Financial or in-kind support from employers.

Career Academies, which have existed for more than 25 years, began in Philadelphia in 1969 as dropout prevention programs. The goals of the Career Academies have evolved over time to include academic and occupational preparation for both students interested in college and those who plan to enter the work world directly after high school. Currently, there are Career Academies in more than 300 high schools throughout the United States, created by individual high schools, state and district networks, and the National Academy Foundation—a nonprofit organization that has developed Academy programs in finance, travel and tourism, and public

service.

Increasingly, the Career Academy approach is seen as a potentially powerful way to improve students' success in school and work. The approach is intended to address several long-standing problems through its structural characteristics: The school-within-a-school feature, for example, is designed to address the feelings of anonymity and solitude that many students experience in large comprehensive high schools. The small-school environment is also designed to allow teachers and students to form closer bonds, and to create a strong peer group support system. Many students describe their Career Academies as being "like a family" and report that they "give them courage to do what they need to do" to succeed in high school.

Another Academy feature, the career-oriented curriculum, is intended to address the problem of high school classes being divorced from the real world, and students' feelings that they gain little benefit from achieving in school. There is steadily increasing evidence that students learn best when course content and instruction are based on problem-solving, real-life projects and hands-on learning opportunities. The third Academy structural characteristic, employer partnerships, is also designed to bring the world of work closer to students' lives and school experiences. These partnerships offer students opportunities to explore career options through work experiences, mentorships, and interaction with workers in the Academy's career field.

The Career Academies Evaluation

The Career Academies Evaluation responds to the growing need for reliable information about the effectiveness of school-to-work and other major school reform initiatives by providing policy- and practice-relevant information on two broad questions:

- How do Career Academies work, and how do they shape students' education and career preparation?
- To what extent do the Career Academies change students' school- and career-related outcomes beyond what they would have achieved anyway had they not had the opportunity to participate in an Academy?

This evaluation will measure the extent to which the Career Academies improve students' engagement and motivation in school, their progress toward graduation, and their preparation for post-secondary education and work. It relies on a random assignment research design in which each of the participating Career Academies identified approximately twice as many eligible applicants as they were able to serve. Then, working with MDRC, they used a lottery-like process to assign students to one of two groups: "the program group," which was invited to participate, or the "control group," which was not invited to participate. Because these two groups were created randomly from a single pool of eligible applicants, there were no systematic differences between them at the time they entered the evaluation. By measuring any subsequent differences between the two groups—for example, in attendance or graduation rates—after the program group is exposed to the Career Academies, one can measure the program's true effect on these outcomes. The Career Academies Evaluation is a notable accomplishment in the field of education research in that it demonstrates the feasibility of conducting random assignment within an ongoing high school program.

For this evaluation, a total of 1,953 students from the 10 sites have entered the research sample over three school years. All of these students were determined by the respective Career Academies to be eligible and appropriate for participation in their programs. Of these, 1,064

students were randomly assigned to the program group and were admitted to the Academies. The remaining 889 students were randomly assigned to the control group, were not invited to participate in the Academies, and were able to choose other options in the high school or school district. MDRC plans to follow the students in the research sample through their scheduled graduation from high school. Eventually, MDRC plans to follow students through several years after their scheduled graduation from high school to learn about their enrollment and progress through post-secondary education, their employment and earnings, and other outcomes.

Data for the evaluation will come from a questionnaire students completed at the time they applied to the Career Academies; students' school records on attendance, achievement, course-taking patterns, and progress through high school; and self-completed questionnaires that are being administered within the first two years following students' entry into the evaluation and again during their 12th grade year. Other data will come from a Teacher Questionnaire administered to Academy and non-Academy teachers in the participating high schools, and from MDRC staff field research visits to each of the participating sites, during which Academy teachers and students, school and district administrators, and local employers involved in the Academy programs were interviewed. MDRC staff also observed classes and other program activities such as student recruitment and special events.

Sites in the Evaluation

MDRC chose the 10 sites participating in the Career Academies Evaluation strategically and through negotiation with the key stakeholders (the district administrators, school principals, Academy staff, and parents) in the school districts and high schools. The selection strategy was intended to identify Career Academies that would give a credible test of the Career Academy approach as it was defined in previous research and implemented in a broad range of settings. The goal was to ensure that the evaluation would include functioning Career Academies that encompassed the defining structural elements of the approach, rather than programs that were in initial or partial stages of implementation. Other selection criteria were that the Academies were in school districts and high schools that reflected the diversity of circumstances under which Career Academies have been implemented, and that they served a range of students, including those who were perceived to be at risk of not succeeding in the regular high school environment and those who appeared to be doing well in school. Finally, participating schools had to agree to carry out the requirements of the random assignment design and other data collection and research activities.

Figure ES-1 shows the names, locations, and affiliations of the 10 Career Academies participating in the evaluation. The participating Academies offer a range of occupational themes: three are in the business and finance fields; three focus on high-technology areas such as electronics and aerospace technology; and one each is in the fields of health occupations, public service, travel and tourism, and video technology. The participating programs were drawn from most of the major, established networks of Career Academies across the country, with four from the California Partnership Academy network, two from the National Academy Foundation network, one from the Florida network of Academies for Career Development and Applied Technology, and one from the network of Academy programs created by the District of Columbia Public Schools. Two of the participating Academies were developed independently through local high school or district initiatives. Figure ES-1 also shows that, as of the 1994-95 school year, the participating Career Academy programs had been in operation for as few as two years and as many as 10 years.

Figure ES-1
Career Academies Evaluation
Names, Locations, and Affiliations of Participating Career Academies



Academy and High School	School District and City	Academy Network and School Year Academy Started
1. Business and Finance Academy George Westinghouse High School	Pittsburgh Public Schools Pittsburgh, PA	Independent 1984-85
2. Academy of Finance Lake Clifton/Eastern High School	Baltimore City Public Schools Baltimore, MD	National Academy Foundation 1987-88
3. Public Service Academy Anacostia High School	District of Columbia Public Schools Washington, D.C.	D.C. Public Schools Academy Network 1989-90
4. Academy for Aerospace Technology Cocoa High School	Brevard County Public Schools Cocoa, FL	Florida's Academies for Career Development and Applied Technology 1993-94
5. Academy of Travel and Tourism Miami Beach Senior High School	Dade County Public Schools Miami Beach, FL	National Academy Foundation 1991-92
6. Health Professions Academy Socorro High School	Socorro Independent School District Socorro, TX	Independent 1991-92
7. Global Business Academy Valley High School	Santa Ana Unified School District Santa Ana, CA	California Partnership Academy 1991-92
8. Watsonville Video Academy Watsonville High School	Pajaro Valley Unified School District Watsonville, CA	California Partnership Academy 1991-92
9. Electronics Academy (SC) Silver Creek High School	East Side Union High School District San Jose, CA	California Partnership Academy 1984-85
10. Electronics Academy (I) Independence High School	East Side Union High School District San Jose, CA	California Partnership Academy 1984-85

Most of the nine school districts in the evaluation (one district includes two of the participating Career Academies) are large and enroll substantial percentages of African-American and Hispanic students as compared to national averages. The participating school districts also have higher dropout rates, unemployment rates, and percentages of low-income families. Most

Career Academies across the country are located in such districts, and MDRC purposely sought such sites for the Career Academies Evaluation.

Principal Findings in This Report

- **Each of the 10 participating high schools implemented and sustained the defining structural elements of the Career Academy approach.**

MDRC's field research provided substantial evidence that the participating sites have both attained and sustained over time a threshold set of conditions that distinguish them as Career Academies and differentiate them from the rest of the large comprehensive high schools in which they operate. Although identifying such Career Academies was an important goal of the site selection process for the evaluation, this finding is also significant for policymakers and practitioners interested in the Career Academy approach. The implementation and ongoing operation of the Academies has required the effort and commitment of the many teachers, administrators, employers, and students involved with the programs. The commonalities among the participating sites allow the aggregation of findings across Career Academies and their use to inform policy and practice related to the Career Academy approach in general.

The structural dimensions of the Career Academy approach may be viewed as important prerequisites for improving academic and occupational outcomes for students. They may also be significant in the way they reflect policies and administrative decisions about the allocation and organization of resources. To be effective, however, these structural changes must contribute to improvements in the quality of supportive relationships among teachers and students, in methods of instruction, and in how students learn in school and in workplaces. Future reports will examine the extent to which the structural features of the Career Academies result in deeper changes in teaching and learning opportunities and, ultimately, in improved academic and occupational outcomes for students.

- **The variation among the participating Career Academies highlights the adaptability of the Academy approach to local needs, capacities, and circumstances. Such variation indicates the potential for the Career Academy approach to be disseminated more widely.**

Although the Career Academy approach is defined by specific changes in the structure of high schools, it is essentially flexible and adaptable, rather than rigid and prescriptive. Each of the 10 high schools in the evaluation has modified the Academy approach in some respects while adhering to its basic principles and defining elements. Variations among the Career Academies were observed in the following areas:

- the number of students and teachers in the program;
- the number and content of courses that students are scheduled to take within the Academy;
- the opportunities for collaboration among Academy teachers, including the regularity and content of the teacher team meetings and the extent of teachers' non-Academy commitments;
- the teaching and administrative responsibilities of the lead teacher or director;
- the degree of vocational and academic curriculum integration;

- the specific links between work-based and school-based learning activities; and
- the role and scope of involvement by employer partners.

Table ES-2 (see Table ES-2 at end of document) displays some of the ways in which the 10 participating Career Academies differ. It shows that Academies with larger numbers of teachers and those that include grades 9 through 12 accommodate more students and cover more courses within the Academies. The larger teaching staff, however, also makes it difficult to schedule shared planning time and to coordinate curriculum content and activities across classes. Career Academies with fewer teachers tend to be somewhat smaller, and the students in the programs tend to take more courses outside the Academies. At the same time, the smaller teaching team makes it somewhat easier to schedule shared planning time and consecutive Academy classes.

The table also indicates that most of the Career Academies in the evaluation provide students with work-based learning opportunities during the summer, and that some continue to offer students this opportunity in the 12th grade year. Three of the programs offer students work-based internships as early as the 10th grade. In all but one of the Academies, students are paid for their work; in eight of the programs, students receive school credit for their work. Although not shown in the table, all of the Academies use classroom-based activities to teach employability skills such as resume-writing, interviewing, and working effectively under supervision. Some of the programs have developed particular activities, such as keeping journals or writing job evaluations, that integrate classroom- and work-based learning.

Involving local employers in Career Academies requires a substantial commitment of time and energy from both school staff and business partners. As shown in the table, most of the participating Career Academies coordinate employer involvement through an employer advisory board and through the efforts of a teacher or administrator who serves as the primary liaison between the program and the employer partners. Employers play a variety of roles: providing advice on curriculum development; speaking in classes or at student functions; hosting student field trips; serving as a source of adult mentors for students; and providing additional resources.

The adaptations revealed by MDRC's field research reflect the Academies' local circumstances and capacities. They do not necessarily reflect relative strengths or weaknesses of one approach over another—at this stage in the evaluation, it is premature to make such judgments. However, these adaptations can be used to test hypotheses about how variation in the basic structures of the Career Academy approach might promote different opportunities for teaching and learning and, ultimately, produce different outcomes for students. Subsequent reports from the Career Academies Evaluation will examine the relationship between the programs' characteristics and their effectiveness.

- **The Career Academies in this evaluation have demonstrated their capacity to attract large numbers of appropriate applicants and to include students with a wide range of demographic and educational characteristics. The appeal of the Academies has extended to students who may be at risk of failing academically or of dropping out of high school, and to students who have done well in school.**

The growth of the Career Academy movement has been accompanied by questions about whether the programs can and should serve a broad range of students and about which students

benefit most from participation in them. The original Philadelphia and California Partnership Academies, which were designed as dropout prevention programs, explicitly targeted students who appeared to be at high risk of dropping out of school. In recent years, the original programs and many newer Academies have sought to include a broader mix of students. One reason for this shift is the stigma associated with serving only low-achieving students and the perception that Career Academies did not provide students with a pathway to college. Another reason is a continued increase in labor market demand for highly skilled workers, which has prompted the Academies to place even greater emphasis on preparation for post-secondary training and college. A third reason is that as resources for Career Academies (from both public and private sources) have been considered for cuts, Academies have come under increasing pressure to demonstrate broad appeal and to show positive results. One response has been for the Academies to market the programs more aggressively to students who are likely to succeed in high school and to go on to college. Including a broader mix of students helps to dispel the perception that the programs are only for “low track students,” to build school-wide support by showing that an Academy is appropriate for all students, and to promote mutual support among high- and low-achieving students.

To accomplish the goal of enrolling a broad range of students, each of the Career Academies in this evaluation designed and implemented new marketing and recruitment strategies. These efforts expanded the number of students who expressed an interest in and applied to the programs: On average, the participating programs recruited approximately twice as many applicants as they were able to serve.

Table ES-3 (see Table ES-3 at end of document) lists selected background characteristics of the students who applied to the Academies in this evaluation, and indicates that they are from diverse family and educational backgrounds. Many of the students are from ethnic or racial minority backgrounds, and there is a wide range of demographic characteristics. The percentage of families receiving public assistance (a proxy for low income) also varies.

The table also indicates that the Career Academies attract students who appear to be at some risk of dropping out or performing poorly in high school, as well as those who reported they were performing well in their classes and believe they will graduate and go on to college. In all, 36 percent of the students had two or more characteristics identified as predictive of dropping out of high school. An important question for this evaluation is whether the Academies keep such students on the road to success in school and work.

- **In all, 84 percent of the students who were selected to participate in the Career Academies enrolled in the programs. Of those who enrolled, 73 percent were still enrolled two years later.**

An essential feature of the Career Academies is their voluntary nature. Students apply for and enroll in them by choice; they are not assigned or required to participate in them. By making a choice to apply to an Academy, students are presumably more likely to have at least a modest level of motivation to engage in an alternative education program and to do well. At the same time, however, students may encounter several factors that push them toward or pull them away from enrolling in a special program like a Career Academy. For example, because the Career Academy recruitment and application process begins in the spring semester prior to enrollment, students are asked to make plans for the following school year up to nine months ahead of time. During that interval, students may be affected by their friends’ choices of high school programs, or they may lose interest in a Career Academy as they learn about other options available within their school or district.

Various factors also affect enrolled students' ongoing participation in the Career Academies. Students' peers may value or devalue school in general and the academic rigor and career focus espoused by the Academies in particular. Teachers can engage or alienate students. Families move, requiring their children to transfer to new schools. As a result of these and other experiences, not all students selected for the Career Academies actually enroll in the programs at the start of the school year, and others leave the programs during high school.

Table ES-4 (see Table ES-4 at end of document) shows the enrollment rates for the first seven sites to enter the evaluation, which have a year or more of follow-up information on students in the research sample. The table shows that 84 percent of the students selected in the spring actually enrolled in the Career Academies the following year (usually at the start of the school year following their selection). The rates ranged from over 90 percent at the Electronics Academy at Independence High School (San Jose) and the Health Professions Academy (Socorro) to 69 percent at the Business and Finance Academy (Baltimore). Table ES-4 also reports the programs' rate of continued enrollment, showing that 73 percent of the students who enrolled in the seven Career Academies were still participating in the programs two years later. This rate ranged from 85 percent at the Electronics Academy at Silver Creek High School (San Jose) to 68 percent at the Health Professions Academy (Socorro) and the Watsonville Video Academy. Most of the students who did not enroll in the Academies or who enrolled but left were enrolled either elsewhere in the high school in which the Career Academies were located or in another high school within the district.

The participation rates in Table ES-4 represent one measure of the extent to which the Career Academies attract and retain the students who apply and are selected for the programs. The findings also raise questions about what happens to students who leave the programs. In this evaluation, the participation rates provide a direct measure of the "amount" of the Career Academy experience that each student receives.

- **Compared to other teachers in the participating high schools, Career Academy teachers reported having more opportunities to collaborate with each other, were more likely to perceive their working relationships and environment as a learning community, and were more likely to develop personalized relationships with their students.**

A key question for the Career Academies is whether their results are due to special characteristics of their teachers or to the work environment they offer for typical high school teachers. The answer to this question will shed light on the extent to which the Career Academy approach can be adapted to a broad range of circumstances and implemented by a broad range of teachers or whether it is heavily dependent on attracting certain types of teachers.

If Career Academy teachers were exceptional in significant ways, the approach would be limited in its capacity to serve a large proportion of high school students. This evaluation found, however, that Career Academy teachers were similar to their colleagues in the same high schools on a range of measured background characteristics. The primary differences between Academy teachers and their non-Academy colleagues in the same high schools were in their perceptions of their work environment; thus, Academy teachers do not appear to be distinctive in terms of their background characteristics and prior teaching experience. Instead, the Career Academy teachers appear to be shaped by their distinctive working conditions. For example, the Career Academies provide teachers with shared planning time and with extended exposure to a core group of students within and across school years. Interviews and survey data show that Career Academy teachers are more likely than their non-Academy colleagues to perceive their school environment as a professional learning community and to have developed closer relationships with students.

Substantial evidence from previous research indicates that such changes affect the quality of teaching and learning for students and for teachers. Subsequent reports will explore the connections between teachers' perceptions of their work environment and the experiences and outcomes of their students.

Next Steps for the Career Academies Evaluation

The current report provides an overview of the basic foundation of the Career Academies Evaluation. It describes the 10 participating Career Academies and draws the conclusion that each has implemented and sustained the defining structural elements of the Career Academy approach and has distinguished itself from the alternatives available to students in the comprehensive high school in which it operates. The report also describes the students who applied to the Career Academies and will constitute the evaluation's program and control groups. Finally, the report provides some preliminary insights into the ways that teachers utilize the Career Academies and how Academy and non-Academy teachers perceive their work environment differently. In summary, the evaluation has established the basic framework for a rigorous and credible assessment of the Career Academy approach and its effect on students' high school performance and preparation for further education and employment.

Having established this foundation, MDRC is continuing the data collection and analyses that will be the basis of the project's primary reports and papers for policymakers, practitioners, and researchers over the next three years. The first of these will focus on results from a survey of students in the program and control groups at the end of the first or second year following their entry into the evaluation. Other reports will provide further information from the Teacher Questionnaire and an update on the operation of the participating Career Academies and patterns of student enrollment. Using data collected from school records, MDRC also plans to report on the impact the Academies have had on students' engagement and performance. Another report will discuss results from a survey administered to students in their 12th grade year. Finally, MDRC will begin work on the second phase of the evaluation, which will follow students beyond their high school years. This will begin with the administration of a survey to students at the end of the first year after they are scheduled to graduate from high school.

Table ES-2
Career Academies Evaluation
Selected Characteristics of the Career Academies as of the 1994-95 School Year

Characteristic	Academy for Aerospace Technology Cocoa, FL	Academy of Finance Baltimore, MD	Academy of Travel and Tourism Miami Beach, FL	Business and Finance Academy Pittsburgh, PA	Electronics Academy (I) San Jose, CA	Electronics Academy (SC) San Jose, CA	Global Business Academy Santa Ana, CA	Health Professions Academy Socorro, TX	Public Service Academy Washington, D.C.	Watsonville Video Academy Watsonville, CA
Grade level of students	10-12	9-12	10-12	10-12	10-12	10-12	10-12	9-12	10-12	10-12
Number of students enrolled in 1994-95 school year (a)	134	190	130	150	105	96	152	180	124	130
Total number of Academy teachers (b)	8	13	7	7	4	4	6	11	9	6
Teachers have a shared planning period during the school day	yes	no	no	no	yes	yes	yes	no	no	yes
Frequency of formal staff meetings	daily	monthly	quarterly	monthly	bi-weekly	bi-weekly	weekly	weekly	weekly	bi-weekly
Total number of classes scheduled within the Career Academy (c)	14	13	12	10	12	9	11	22	16	10
Subject areas of Career Academy courses	Social Studies Science English Math Aerospace Technology	Social Studies Science English Computers & Finance	Social Studies Science English Travel & Tourism	Social Studies English Business & Finance	Science English Math Electronics	Science English Math Electronics	Social Studies English Math Business & Computers	Social Studies Science English Math Health Occupations	Social Studies Science English Math Business & Government	Social Studies English Math Video Academy
When work activities typically occur (d)	10th, 11th, and 12th grades	summer after 11th grade	summer after 11th grade, 12th grade	summer after 11th grade	summer after 11th grade	summer after 11th grade	summer after 10th or 11th grade	11th and 12th grades	summer after 11th and 12th grades	summer after 10th or 11th grade, 12th grade
Students are paid for work experience	no	yes	yes	yes	yes	yes	yes	yes	yes	yes
Students receive school credit for work experience	yes	no	yes	no	yes	yes	yes	yes	yes	yes
Academy has a non-teaching coordinator responsible for employer involvement	yes	yes	yes	no	yes	yes	no	no	yes	yes
Academy has an employer advisory board	yes	yes	yes	yes	yes	yes	no	yes	yes	yes

Notes: (a) Includes students in all grade levels of the Academy.

(b) Includes teachers who have only Career Academy responsibilities and teachers who have both Academy and non-Academy responsibilities.

(c) Includes all classes offered within the Career Academy across all grades.

(d) Work activities include experiences such as paid and unpaid internships and community service. Activities such as mentorships, job shadowing, and field trips are not included.

Table ES-3

Career Academies Evaluation

Selected Characteristics of Students in the Research Sample at the Time They Entered the Study

Characteristic	Full Sample	Academy for Aerospace Technology Cocoa, FL	Academy of Finance Baltimore, MD	Academy of Travel and Tourism Miami Beach, FL	Business and Finance Academy Pittsburgh, PA	Electronics Academy (I) San Jose, CA	Electronics Academy (SC) San Jose, CA	Global Business Academy Santa Ana, CA	Health Professions Academy Socorro, TX	Public Service Academy Washington, D.C.	Watsonville Video Academy Watsonville, CA
Gender											
Male	44.4 %	52.4 %	37.9 %	39.4 %	62.1 %	53.3 %	58.6 %	44.5 %	30.7 %	36.7 %	48.5 %
Female	55.6	47.6	62.1	60.6	37.9	46.7	41.4	55.5	69.4	63.3	51.5
Race/ethnicity											
Black	30.2	29.0	97.3	26.0	100.0	4.3	11.3	3.9	0.0	96.6	0.0
White	9.9	62.9	1.2	9.3	0.0	9.4	13.1	0.7	2.1	0.0	14.6
Hispanic	53.1	4.8	1.2	62.5	0.0	50.4	43.1	90.8	97.4	1.7	82.6
Asian	6.1	1.6	0.0	1.3	0.0	35.9	31.3	4.6	0.0	0.0	2.1
Native American	0.7	1.6	0.4	1.0	0.0	0.0	1.3	0.0	0.5	1.7	0.7
Family on public assistance											
Family receiving welfare	15.1	10.9	19.7	12.2	29.1	18.7	15.7	8.4	11.3	33.0	12.2
Family receiving food stamps	19.6	10.1	25.3	16.9	28.6	16.1	13.3	11.5	38.8	34.6	13.0
Family composition											
Two-parent household	61.5	64.5	40.9	47.4	35.5	72.3	70.7	79.7	82.5	25.0	72.1
Single-parent household	33.3	30.7	47.6	46.8	61.3	26.9	23.4	17.4	14.4	69.0	23.3
Student lives with other relatives	5.2	4.8	11.4	5.8	3.2	0.8	6.0	2.9	3.1	6.0	4.6
English grades since the 6th grade											
Mostly As and Bs	61.2	53.6	64.2	59.6	40.9	45.8	51.3	63.0	87.7	63.6	59.4
Mostly Cs and Ds	38.8	46.4	35.7	40.4	59.1	54.1	48.8	37.0	12.3	36.5	40.6
Math grades since the 6th grade											
Mostly As	53.2	40.8	57.3	54.6	38.5	40.9	47.0	47.7	74.1	51.7	57.6
Mostly Bs	46.7	59.2	42.6	45.4	61.6	59.2	53.0	52.3	25.9	48.3	42.4
Students' future expectations											
Plans to graduate from high school	99.7	100.0	99.6	100.0	98.5	100.0	100.0	99.3	100.0	100.0	99.3
Plans to graduate from college	64.9	61.9	66.9	74.4	49.2	47.5	71.4	53.9	74.9	63.0	65.9
Plans to have a professional career at age 30	32.0	21.9	42.3	44.0	26.8	20.9	20.2	22.3	52.9	31.5	22.1
Percent with two or more risk factors (a)	35.8	22.2	39.7	41.8	40.0	26.7	24.3	39.4	34.7	49.2	33.1
Sample size	1,953	126	261	312	66	120	169	283	199	120	297

Source: MDRC calculations from the Career Academies Student Baseline Questionnaire.

Note: (a) The six indicators included as risk characteristics for school failure are: living in a single-parent household, living in a low-income household, student speaks limited English, home alone at least three hours per day, has a sibling who dropped out of high school, and neither parent has a high school diploma. These indicators were identified as risk factors by the National Center for Education Statistics using data from the National Educational Longitudinal Study of 1988 (NELS:88), which surveyed a national sample of 8th graders.

Table ES-4

Career Academies Evaluation

Rates of Enrollment in the Career Academies Among Program Group Students

Enrollment Status	Full Sample	Academy of Finance Baltimore, MD	Academy of Travel and Tourism Miami Beach, FL	Electronics Academy (I) San Jose, CA	Electronics Academy (SC) San Jose, CA	Global Business Academy Santa Ana, CA	Health Professions Academy Socorro, TX	Watsonville Video Academy Watsonville, CA
All program group students (a)								
Enrolled in the first year following random assignment (b)	84.2 %	69.4 %	80.0 %	92.4 %	82.8 %	88.8 %	91.6 %	86.1 %
Sample size	703	98	115	66	93	116	107	108
Program group students who enrolled in a Career Academy (c)								
Enrolled at the end of the second year following random assignment (d)	72.9 %	71.9 %	75.0 %	72.4 %	84.6 %	72.5 %	68.0 %	68.1 %
Sample size	292	32	44	29	39	51	50	47

Source: MDRC calculations from Career Academies student enrollment data collected through the 1994-95 school year.

Notes: (a) This sample includes students who were randomly assigned to the program group in 1993 and 1994 from the first seven sites to join the study.

(b) "Enrolled in the first year" includes all program group students who enrolled in the Career Academy during the first or second semester following random assignment.

(c) This sample includes all students from the first seven sites to join the study who were randomly assigned to the program group in 1993.

(d) "Enrolled at the end of the second year" includes all program group students who enrolled in the Career Academy during the fourth semester following random assignment.