

**Career Academies**

<b>Population Served</b>	High school students
<b>Foundation for Success (Inputs)</b>	<ul style="list-style-type: none"> <li>• Academic knowledge</li> <li>• Technical knowledge/skills</li> <li>• 21<sup>st</sup> Century skills</li> <li>• Goal-setting</li> <li>• College and career knowledge</li> </ul>
<b>Evaluation</b>	Longitudinal experiment with random assignment design.
<b>Findings</b>	Increased high school graduation rates, postsecondary employment rates and earnings. Increase in positive youth development activities; increase in family formation and establishing independent households by 8 years after high school graduation.
<b>Elements of Success</b>	<ul style="list-style-type: none"> <li>• Smaller learning communities</li> <li>• Adult mentors</li> <li>• Work-based learning</li> <li>• Applied and contextual curriculum</li> <li>• Employer partnerships</li> </ul>

**Program Overview:**  
 Career Academies are smaller learning communities (SLCs) organized around a career theme, usually existing within larger high schools. The Academies integrate academic and vocational curricula, using the context of the career theme, and usually provide work-based learning opportunities with employers and community partners. Career Academies aim to keep more students engaged in learning, to increase graduation rates, and to prepare students for success after high school.

The structural features of a career academy—employer partnerships, SLCs, and

combined academic and vocational curricula—are intended to enhance the rigor and relevance of the high school curriculum by providing enriched learning, career awareness, and interpersonal supports.

There are more than 2,500 Career Academies nationwide, and the model has been used as a core component of many comprehensive school reform and redesign initiatives. Career Academies originated in the 1970s, and they were initially framed as dropout prevention strategies aimed to prepare disadvantaged youth for the workforce. Changing perspectives on career and technical education (CTE) in the late 1980s brought an increased emphasis on Career Academies as a vehicle for both college preparation and career awareness, rather than direct job skill training, and the target population has expanded to include all students.

**Key Findings:**

At the high school level, Career Academies increased all students’ likelihood of completing the required credits for graduation, and they also increased high-risk students’ likelihood of staying in school and completing a core academic curriculum. They also increased the likelihood of participating in positive youth development activities. At the postsecondary level, Career Academies produced a significant,

sustained increase in former participants' earnings and overall months and hours of employment. These labor market impacts were particularly concentrated among young men and youth who had been in the high-risk subgroup. The former Academy participants also had higher rates of family formation and living independently, as opposed to with parents, by eight years after their expected high school graduation.

### High School Impacts

- Across the full sample, Career Academy students were 6 percentage points more likely to complete the required credits for high school graduation.<sup>1</sup>
- High-risk students in Career Academies demonstrated increased engagement and educational attainment during high school.
  - The Academies doubled the rate at which high-risk students completed a core academic curriculum, raising this completion rate to 32%, versus 16% of the control group.
  - Academy students in the high-risk subgroup were 14 percentage points more likely to complete the required credits for high school graduation.
  - Academies reduced the dropout rate for high-risk students by 11 percentage points.
- Low-risk students in Academies were also significantly more likely to complete the required credits to graduate on time.<sup>2</sup>
- For the full sample, the Academies did not demonstrate a statistically significant impact on high school dropout rates.
- Academy students were more likely to have participated in a “positive youth development” activity in the prior year (such as volunteering or receiving an award).
- There was no significant difference in test scores between Academy and non-Academy students.<sup>3</sup>
- There was high attrition from Academies, as only 58% of those who were originally assigned to Academy group stayed in program through high school. This figure includes the 17% of the treatment group that never actually participated in the program.
- Follow-up reports found that Career Academies did not have a significant impact on ultimate high school completion rates, based on receipt of a high school diploma or GED.
  - The completion rates for both Academy and control students were higher than the national averages, with approximately 84% of students in both groups earning a high school diploma and 10-12% earning a GED.

### Labor Market Outcomes

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<sup>1</sup> Findings in this section are statistically significant at the 1% level unless otherwise noted.

<sup>2</sup> The difference is statistically significant at the 5% level.

<sup>3</sup> This result is based on a smaller subsample of 490 students, to whom the researchers administered standardized math and reading assessments.

- The Academy students had higher average monthly earnings during the 8-year follow-up period, which were sustained across each year.
  - The Academies produced an average increase in income of \$132 per month during the first 4 years after expected high school graduation, and this impact increased to an average benefit of \$216 per month during years 5-8 of follow-up.<sup>4</sup>
  - Over the 8 years of follow-up after high school, the former Academy students earned an average total of 11% more than the control group.
- The former Academy students were more likely to be working in a field they studied in high school (39%) than comparison students (31%).
- The impacts on earnings were concentrated among young men.
  - Males from the Academy group earned 17% more, on average, than the control group across the 8 years.
  - The Academies also produced significant benefits for men in the number of months they were employed, the amount of hours worked per week, and hourly wages.
- Young women from the Academies also had higher earnings than the control group, but the differences were not statistically significant.
- Participation in the Academies had a particularly strong impact on youth in the high-risk subgroup, increasing the earnings of youth in this group by 17%.

#### Postsecondary Educational Outcomes<sup>5</sup>

- The Academies did not have an overall impact on postsecondary enrollment or attainment.
  - Approximately 50% of both the experimental and control groups earned postsecondary credentials. This rate was nearly twice the national average.<sup>6</sup>
  - These trends were the same for male and female students.

#### Impacts on Family Formation and Independent Households<sup>7</sup>

- Career Academies increased the likelihood that young adults would be custodial parents by 7 percentage points and increased the likelihood that they would live independently with children and a spouse or partner by 6 percentage points.<sup>8</sup>

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<sup>4</sup> The differences in this section are statistically significant at the 1% level unless otherwise noted.

<sup>5</sup> All findings in this section were observed at the 8-year follow-up data collection point.

<sup>6</sup> The national average rate of postsecondary completion was based on eight-year post-high school follow-up data from the National Education Longitudinal Study (NELS), 1988-2000. The comparison sample consisted of all students from urban, public, non-selective high schools in the NELS data, and the estimate was regression-adjusted to reflect a sample of students with the same background characteristics as the evaluation's control-group sample.

<sup>7</sup> All findings in this section were observed at the 8-year follow-up data collection point, and emerged during the time that participants were approximately 22-26 years old.

<sup>8</sup> The difference is statistically significant at the 5% level.

- The Academies decreased the likelihood that study participants would continue to live with their parents by 4.5 percentage points.<sup>9</sup>
- The impacts on family formation were particularly strong for young men: their marriage rates increased by 9 percentage points<sup>10</sup> and their rates of custodial parenting increased by 12 percentage points.<sup>11</sup>

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**Program Population:**

- There are over 2,500 Career Academy programs across the US, including both single programs and SLCs within large high schools offering multiple Academies.
- The high schools included in the MDRC evaluation were located in the following districts: Baltimore City, East Side Union (San Jose, CA), Miami-Dade, Pittsburgh, Santa Ana (CA), Socorro (TX), Pajarro Valley (Watsonville, CA), and Washington, DC.
- These schools served predominately Latino and African American populations.
- The Academies served a range of students, including those at-risk of high school dropout as well as students with average or high achievement.

**Program Components:** The specific structures, themes, and elements of Career Academies vary widely, but their common, core components include:

- School-within-a-school organization: students take several classes each day with peers and teachers belonging to the same Academy. The Academies featured in the MDRC studies typically serve 150-200 students each. Academy courses are often block scheduled during one half of the school day.
- Academic and vocational curricula focused on a career theme: students in the Academy typically take several academic courses and at least one vocational course associated with their Academy each year. The career themes typically cover industry sectors, such as Allied Health, rather than specific occupations.
- Employer partnerships: local employers provide work-based learning opportunities, such as internships, and career awareness and development activities, such as job shadowing, field trips, mentorship, and guest speakers for students.

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<sup>9</sup> The difference is statistically significant at the 10% level.

<sup>10</sup> Ibid.

<sup>11</sup> The difference is statistically significant at the 1% level.

### **Evaluation overview:**

The Career Academies Evaluation was a longitudinal, experimental study conducted by MDRC that spanned over 11 years of data collection. This study examined the short- and long-term outcomes of a cohort of students from Career Academies and control groups from 9 different high schools across the country. The evaluators randomly assigned applicants to Career Academies to either treatment (Career Academy) or control (non-Academy) groups at each school. The 7<sup>th</sup> and final report in this series (Kemple, 2008) analyzes the impact of Career Academy participation on former students' transitions to adulthood, after following students for 8 years after expected high school graduation, and 11-12 years after participants entered Career Academies.

### **Evaluation Population:**

- The original sample included 1,764 students from 9 schools. By the final data collection point, 1,428 study participants responded to the survey, representing 81 percent of the full sample.
- The majority of study participants were female (56%) and students of color. The sample was 56% Latino, 30% African American, 7% Asian, and 6% white.
- Less than 30% of study participants had a parent with any postsecondary education.
- A significant proportion of the participants' families were low-income, with a quarter of the families receiving welfare or food stamps.
- The majority of participants scored below the 50<sup>th</sup> percentile on 8<sup>th</sup> grade math and reading standardized tests.
- At the start of the study, 36% of the sample members had a GPA of 3.1 or higher; 38% had a 2.1-3.0; and 26% had a 2.0 or lower.
- All students in the study were tracked through follow-up, including the students who dropped out of high school.
- At the time of the last report, most participants were about 26 years old.
- All of the schools included in the study had implemented Academies for at least 2 years prior to the beginning of data collection. The target high schools were chosen to represent the diversity of Career Academy programs as well as the full implementation of the model's core components. They were drawn from most of the major networks of Academies, including the California Partnership Academies and the National Academy Foundation. The Academies in the study may not be representative of the full set of programs operating under the model nationally.

### **Methodology:**

- As each of the Academies studied attracted more eligible students than they could enroll, eligible 9<sup>th</sup> grade applicants were randomly assigned by a lottery process to the Academy

(experimental) group and the non-Academy (control) group. Approximately 45 percent of the applicant pool was placed in the control group.

- The students in the sample were classified into 3 subgroups based on risk factors associated with dropping out of high school. The risk factors were selected based on both previous research and the findings from the study's control group, and included 8<sup>th</sup> grade attendance rate and grades, prior grade retention, and having a sibling who had dropped out of school. The researchers grouped each student at the beginning of the study based on his or her estimated probability of dropping out, with specific weights assigned to each risk factor. The weights were empirically derived from the dropout rates in the control group.
  - 25% of both Academy and control were considered at "high risk" of dropping out.
  - 50% were "medium risk;" these students were not as likely to drop out, but they were likely to have low engagement in high school.
  - 25% were "low-risk," meaning that they were more likely to be on track for graduation.
- Quantitative data were obtained from high school transcripts, test scores, and surveys administered during high school and at 3 follow-up points after high school. The last survey was administered approximately 96 months after anticipated high school graduation.
- Statistical regression analyses controlled for pre-existing differences in student backgrounds as well as the different high schools attended by participants.
- The researchers examined the differences between experimental and control group outcomes at each data collection point, as well as the differences in outcomes for subgroups based on race, gender, and risk status.

**Discussion:**

The programs included in this study had all reached a minimum threshold level of implementation of the Career Academies model. However, the researchers noted that as Career Academies have been widely adopted, some programs have relied on only one or two of the model's individual components. *The researchers recommend that until further research indicates specific effects of each component, practitioners wishing to replicate the positive impacts observed in this study should implement the model with all three components in place.*

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**Funding/Cost:**

- Career Academies have been through multiple initiatives and networks. The California Department of Education provided funding for the development of 200 Partnership Academies in the late 1990s. The National Academy Foundation has received support from American Express and Citigroup.
- Most Career Academies are supported by regular public education funds, as well as federal Small Learning Communities and Comprehensive School Reform grants.

- The MDRC evaluation was funded with support from the US Department of Education and the US Department of Labor, along with 18 private foundations and organizations.

**Policy Implications:** *This section does not necessarily reflect the views of the researchers and program contacts; these are the interpretations of AYPF, based on the program and evaluation.*

**Long-Term Labor Market Benefits:** This study provides strong evidence that Career Academies produce long-term financial benefits by improving postsecondary labor-market prospects. The findings indicate that potential benefits are particularly high for young men and those at high-risk of dropping out of high school.

**Family Formation:** An unexpected positive outcome of this evaluation is the finding that participation in a career academy increased the likelihood of young adults to be independent of their parents, to be married, and to be a custodial parent.

**Benefits for the Most At-Risk Students.** Participation in a Career Academy was shown to have a higher impact in earnings for young men and in particular for at-risk males, without any decline or decrease in educational outcomes. Given that this population faces many challenges in terms of labor market attachment, career academies should be viewed as an educational strategy for this target group.

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**First Things First**

<b>Population Served</b>	Students in grades K-12 (evaluations focus on middle and high school)
<b>Foundation for Success (Inputs)</b>	<ul style="list-style-type: none"> <li>• Academic knowledge</li> <li>• Personal development and wellbeing</li> </ul>
<b>Evaluation</b>	A mixed-method, comparative, interrupted time-series evaluation.
<b>Findings</b>	In Kansas City, FTF schools improved academic outcomes, such as reading and math performance, attendance and graduation rates. In the expansion sites, gains from the early implementation of FTF were less prevalent or significant. FTF was associated with improvements in standardized test scores, though the impacts were only statistically significant at one Houston high school.
<b>Elements of Success</b>	<ul style="list-style-type: none"> <li>• Accelerated remediation</li> <li>• Smaller learning communities</li> <li>• Advocacy systems</li> <li>• District-wide commitment to reform</li> <li>• Responsive technical assistance providers</li> <li>• Embedded professional development</li> <li>• Common planning time</li> <li>• Data-driven instruction</li> <li>• Formative assessment</li> <li>• Block scheduling</li> </ul>

**Program Overview:**

First Things First (FTF) is a comprehensive school reform model focused on improving organizational structures, interpersonal relationships, and classroom instruction and on building capacity at the school and district levels to strengthen and sustain these improvements. The model focuses on interventions at the high school and middle school levels and through K-12 feeder patterns. The three hallmark elements of the model are small learning communities, a family and student advocate system that provides long-term academic and social support to each student, and instructional improvement efforts driven by enhanced teacher professional development and leadership support.

FTF was initially designed by the Institute for Research and Reform in Education (IRRE) and adopted in Kansas City, Kansas in 1996, with implementation beginning in 1998 in one of the district’s four comprehensive high schools and

its feeder middle and elementary schools. Over the next two years, the model was adopted in the district’s three remaining comprehensive high schools and their feeder schools. The experience of the Kansas City site led to the expansion of the model to four additional school districts in Mississippi, Missouri, and Texas. The scaling-up effort was a U.S. Department of Education-funded research and demonstration project; IRRE directed implementation in the expansion sites while the evaluation was conducted by MDRC, an education and social policy research organization. The model is now being

implemented in more than 12 school districts nationwide, and targets particularly low-performing, high-poverty schools.

The model is based on theory from developmental and motivational psychology and strives to personalize all aspects of the school experience. FTF posits that by making the educational experience more personal, school environments will satisfy both students' and faculty members' fundamental needs to feel competent, autonomous, and related, which will result in higher levels of engagement. The theory of change goes on to state that when students and adults in these settings are more engaged in their work – teachers seeking to improve their instruction, students working toward higher expectations, and families doing what they can to support student success – better academic outcomes, including student attendance, achievement, progress toward graduation, and postsecondary success, follow.

### **Key Findings:**

In Kansas City, FTF schools saw large gains in a variety of academic outcomes, such as reading and math performance, attendance and graduation rates, and also improvements in school climate. These gains were sustained over several years and were pervasive across the district's schools. Similar gains were not observed in the most comparable schools in the rest of the state. The impact was particularly pronounced for reading scores and graduation rates. In the expansion sites, gains from the early implementation of FTF were less prevalent or significant. FTF was associated with improvements in standardized test scores, though the impacts were only statistically significant at one Houston high school.<sup>12</sup>

*The findings reported in this section are drawn from two evaluations: the MDRC Study refers to Quint, et al. (2005) and the Youth Development Strategies, Inc. Study refers to Gambone, et al. (2004). An overview of each of these evaluations, along with information on their study populations and methodologies, is presented in a later section of this profile.*

### **Kansas City**

#### **MDRC Study**

- In 8<sup>th</sup> grade reading, FTF was associated with a 14 percentage point relative gain in the percent of students scoring proficient in 2004 (the last year of data collection).<sup>13</sup>

<sup>12</sup> The MDRC researchers point out that the impact estimates are very conservative and may well underestimate the impacts of FTF. As the number of schools in the sample is relatively small, only relatively large impacts can be detected with statistical significance. Also, in Kansas City and the Mississippi Delta, the baseline period used to measure improvement was a year after FTF implementation and thus not a true measure of the baseline situation.

<sup>13</sup> The difference is statistically significant at the 1% level.

- In 11<sup>th</sup> grade reading, FTF schools experienced an 11 percentage point relative gain in the percent of students scoring proficient in 2004.<sup>14</sup>
- The impact on math results was smaller and less consistent, but the FTF schools still saw substantial improvements, particularly at the 7<sup>th</sup> grade level. FTF schools experienced a 10 percentage point relative gain in 7<sup>th</sup> grade math proficiency in 2004.<sup>15</sup>
- Attendance at FTF schools, which was originally lower than the comparison schools, improved at a faster rate. FTF's impact on the rate of improvement in high school attendance ranged from 1.7-8.6 percentage points during the various years of the study, and this difference was statistically significant in 2 of the 4 years.<sup>16</sup>
- FTF schools saw significantly larger improvements in graduation rates than comparison schools, with relative gains ranging from 10.6 to 15.7 percentage points during the follow-up years.<sup>17</sup>

#### Youth Development Strategies, Inc. Study

- Support from teachers was most strongly related to positive student outcomes, followed by student engagement.
- Students reporting high levels of teacher support were significantly more likely to score proficient on state tests and to meet district attendance standards.
- High schools with the highest levels of *staff* engagement and teacher support from colleagues reported higher student achievement scores.
- Students reported increased feelings of support from teachers and increased engagement in school.
- Teachers' ratings of support from administration and engagement in their jobs increased.

#### Houston:

- FTF was associated with improvements in standardized test scores at the one high school with three years of implementation. At this school, FTF outperformed the comparisons by up to 12.5 percentage points in the last two years of follow-up.
- This particular high school also scored higher than all of the other expansion sites in terms of the level of implementation of the FTF model, and teachers reported statistically significant increases in feelings of support and engagement over time. At the other schools, teachers' feelings of support and engagement did not change significantly over time.

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<sup>14</sup> Statistically significant at the 5% level.

<sup>15</sup> Ibid.

<sup>16</sup> Attendance, dropout, and graduation data for the years prior to FTF implementation were available, and the researchers used a baseline average of the school-level rates from three academic years, 1997-98, 1998-99, and 1999-2000. The statistically significant findings for attendance were significant at the 1% level.

<sup>17</sup> Statistical significance ranges from 1-5%.

- There was no significant effect on high school attendance or graduation rates or middle school outcomes.

**Riverview Gardens:**

- FTF was associated with relative improvements in math scores at the middle and high school levels, though findings were not statistically significant.

**Mississippi Delta:**

- FTF was associated with relative improvements in high school reading scores, though findings were not statistically significant.

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**Program Population:**

- The FTF model serves all students from all communities in a district, but it was designed to focus on schools serving large numbers of low-income students.
- Most FTF schools are predominately nonwhite, and over 50% of students are eligible for FRPL.

**Program Components:**

- Smaller Learning Communities (SLCs) in FTF are groups of no more than 350 students and their teachers, who stay together for all the years the students are in the school. The SLCs are organized around broad academic and career themes. Teachers typically have students multiple times over the course of their school experience, allowing them to build longer-term relationships. Teacher schedules include a large amount of planning time with staff who share the same set of SLC students.
- Family and Student Advocate System: Each student has a faculty member, from the same SLC as the student, who serves as an advocate, monitors the student's progress and development, and acts as a liaison between the school and the family. Advocates are expected to meet in person with their students' families at least twice a year and meet weekly with their students during a regularly scheduled advocate period during the school day.
- Instructional improvement efforts include both teacher professional development (the bulk of which is on-site and embedded during the school day), to help teachers make instruction rigorous, engaging, and aligned with state and district standards, and structural changes in how instruction is delivered.
  - The model does not prescribe a specific curriculum. Curricula are to be aligned with state and local standards. Kansas City engaged in extensive professional development with outside consultants on literacy and student engagement strategies, and some expansion sites contracted with the same consultants. As FTF has evolved, it has

incorporated these supports into its own comprehensive and coordinated instructional improvement model.<sup>18</sup>

- The model calls for increased instructional time (80-90 minute blocks) and lower student-teacher ratios whenever possible.
- Structure and Leadership: each district includes a FTF liaison in a district leadership position, and each school has a School Improvement Facilitator.
- Academic Supports: Transitional Communities and Opportunity Centers are provided for those below grade level or over-age, with the goal of catching up to their grade level within one year.
- Use of data: FTF schools utilize a data management and analysis software program called Measuring What Matters (MWM) to evaluate their progress toward implementation of the model's core components, as well as to monitor student progress. MWM allows teachers and principals to link data from classroom observations to student outcome data, in order to guide instructional improvements. IRRE works with the School Improvement Facilitators to monitor implementation.

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### Overview of Evaluations:

*Youth Development Strategies, Inc. Study (2004):* This evaluation analyzed the experience of school improvement in the Kansas City, Kansas schools at the various stages of implementation of the FTF conceptual model. This was a mixed-method study, and the analysis of quantitative outcomes compared data from FTF schools to statewide averages and trends. Data sources included student and staff surveys, interviews with teachers and administrators, classroom observations, and school records.

*MDRC Study (2005):* This evaluation represented the final report of the Scaling Up First Things First Demonstration, a five-year research and demonstration project involving MDRC and IRRE. The study is a mixed-method, interrupted time-series evaluation which compares changes seen in FTF schools with similar groups of schools that did not implement FTF. The study followed the implementation and early results from expansion sites, which included secondary schools in Houston, the Riverview Gardens District, an inner-ring district in metropolitan St. Louis, and two sites in the Mississippi Delta: Greenville and Shaw. Additionally, this study reanalyzed the Kansas City, Kansas data using a different methodology and added an additional year of follow-up.

*Note:* As the MDRC evaluation expanded upon the earlier Youth Development Strategies, Inc. research, including additional years of data and a matched comparison group, this program profile primarily features the results of the MDRC evaluation. Results from the student and staff surveys of the Youth

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<sup>18</sup> This instructional improvement “package” is now being offered as a stand-alone set of supports in several school districts under the title “Every Classroom Every Day” and is the focus of an ongoing randomized control trial study funded by the Institute for Educational Sciences.

*Development Strategies, Inc. evaluation are reported here to provide information on the program elements which were most strongly associated with successful outcomes.*

**Evaluation Population:**

- The study population included all students at the featured FTF secondary schools during the study period. Data were collected for the period prior to FTF’s implementation for most sites, and data collection continued through the 2003-2004 school year.
- The scope of the evaluation varied across sites. In Kansas City, it included all four comprehensive high schools in the district and the elementary and middle schools in their feeder patterns. In Houston, the evaluation included three high schools and four middle schools. In Riverview Gardens, it included one high school and its two feeder middle schools. In Mississippi, it included two high schools in two school districts in the Mississippi Delta region of the state.
- The student population was predominately Latino in Houston, mostly African American in Mississippi and St. Louis, and both Latino and African American in Kansas City, Kansas.

**Study Methodology:**

*MDRC Evaluation:*

- The evaluation followed a comparative interrupted time series design. It compared changes in selected school-level outcomes over time in FTF schools with changes in a matched sample of schools that did not implement FTF.
- Quantitative data sources included student records and aggregate school data, including scores from statewide assessment tests, as well as teacher and student surveys. Qualitative data consisted of site visits, classroom observations, and interviews.
- Teacher and student feelings of “support” and “engagement” were assessed using scaled surveys.
- The Houston study featured the most complete version of the evaluation design. Comparison schools were chosen from the Houston school district based on similar pre-intervention test scores. The researchers also used regression analyses to adjust outcome data for changes over time in student composition. The data included 3 pre-intervention baseline years, with 3 years of follow-up data from one high school and its feeder middle schools, and 2 years of follow-up findings from the remaining two high schools and their feeder middle schools.
- The Riverview Gardens study used a similar design, and included data from 3 baseline years and 3 follow-up years. Comparison schools had to be selected from other urban Missouri districts, however, because FTF was implemented in all the district’s secondary schools. Additionally, only school-level data were available for Riverview Gardens, which made researchers unable to adjust data for changes in the student populations over time.

- The Kansas City study used baseline data from 2001, the first year that a new state assessment was administered.<sup>19</sup> Three additional years of follow-up data were included. The study used comparison schools from other districts in the state, and the outcome results were adjusted for demographics.
- The Mississippi Delta study used baseline data from 2002, which was also the first year that a new state assessment was administered, with only 2 years of follow-up data.<sup>20</sup> Data were available only at the school level, and widely disparate pre-intervention English and math scores at one of the two FTF schools made it impossible to find comparison schools for that site. *The researchers caution that the findings from the Mississippi Delta should be considered as suggestive only.*

#### *Youth Development Inc. Study:*

- The study focused exclusively on Kansas City, Kansas schools.
- The evaluators collected data from student and staff surveys, interviews with teachers and administrators, classroom observations, and school records.
- Changes in students' achievement over time were measured as changes in the proportion of students scoring proficient or above on state assessments in each subject and grade, controlling for race, poverty, and gender.
- The results from FTF schools were compared with state averages, but the study did not have a matched comparison group of schools.

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#### **Funding/Cost:**

- The estimated cost of FTF (including professional development training, materials, estimated district and school incremental personnel costs, and all technical assistance and consultant fees and expenses) is approximately \$500,000 per year for planning and implementation.
- This translates into approximately \$250 per student for large high schools (1500-2000+ students). Cost reductions are possible for FTF implementation across multiple schools in one district.
- A cost-benefit analysis of comprehensive school reform models conducted by Levin, Belfield, Muenning and Rouse (2007) found that FTF produced the greatest return on investment, with regard to increases in graduation rates.
  - For every dollar spent on FTF, the additional benefit to society was \$3.54.<sup>21</sup>

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<sup>19</sup> FTF had already been implemented for 1-3 years in the Kansas City, KS schools at this point. Because the baseline data was collected after FTF's initial implementation, the study may underestimate some of the results from Kansas City, and actual impacts may have been larger than reported.

<sup>20</sup> FTF had already been implemented for 1 year in the Mississippi Delta at this point.

<sup>21</sup> The cost-benefit analysis relied upon the MDRC data from Kansas City, Kansas. FTF was the only reform model that met the authors' criteria for a rigorous evaluation and demonstrated a positive impact on graduation rates.

- Initial funding for the implementation and YDSI evaluation of FTF in Kansas City, Kansas was provided by the Ewing Marion Kauffman Foundation.
- The scale-up and 5-year research project was funded by the US Department of Education.

**Policy Implications:**

*This section does not necessarily reflect the views of the researchers and program contacts; these are the interpretations of AYPF, based on the program and evaluation.*

District-wide focus and long-term commitment: The MDRC evaluators attribute FTF’s greater success in Kansas City, Kansas largely to the leadership and buy-in of key district leaders and longer implementation, as compared with the varied levels of support and shorter time implementing the initiative in the expansion sites. Comprehensive school reform models take more than 2-3 years to implement fully and achieve the kind of dramatic results reported for Kansas City, Kansas. Policymakers need to commit to a long-term reform strategy over several years, use data to inform progress and make mid-course corrections as needed, and provide sustained funding for this period.

Technical assistance: Policymakers should provide greater support for a sustained, active role for high-quality technical assistance providers as part of school improvement grants, as a way to build district and school capacity.

Cost-effectiveness: According to the analysis by Levin, Belfield, Muenning and Rouse (2007), FTF is a cost-effective intervention that results in a substantial return on investment, in terms of the individual and societal benefits of raising graduation rates.

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The analysis also recognizes Talent Development, AVID, National Academy Foundation, KIPP, and Institute for Student Achievement as promising models, with regard to cost-effectiveness.

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**Opening Doors Learning Communities at Kingsborough Community College**

<b>Population Served</b>	Community college students in their first semester
<b>Foundation for Success (Inputs)</b>	<ul style="list-style-type: none"> <li>• Academic knowledge</li> <li>• Academic success behaviors</li> <li>• Personal development and wellbeing</li> <li>• Persistence in postsecondary education</li> </ul>
<b>Evaluation</b>	Experimental design using an interrupted time series methodology; participants were randomly assigned to treatment and control groups.
<b>Findings</b>	Improved course-passing rates and GPAs during the program semester, faster progression through developmental English requirements, greater overall student satisfaction.
<b>Elements of Success</b>	<ul style="list-style-type: none"> <li>• Increased tutoring and academic support services</li> <li>• Smaller learning communities</li> <li>• Personal relationships</li> <li>• Financial assistance</li> <li>• Comprehensive social support services</li> <li>• Strong/ effective leadership of the reform effort</li> <li>• Team teaching</li> </ul>

**Program Overview:**

MDRC, an education and social policy research institution, developed the Opening Doors demonstration project to test promising practices aimed to improve the achievement and persistence of students at community colleges. The six community colleges included in the project developed and piloted diverse interventions that incorporated at least two of the project’s three key strategies: curricular and instructional innovations; enhanced student services; and supplementary financial aid. The participating colleges were located in New York, California, Louisiana, and Ohio. *An evaluation of the Opening Doors program at Chaffey College in Southern California is also featured in this compendium.*

**Learning Communities at Kingsborough Community College**

The Opening Doors Learning Communities program, an intervention aimed at improving the success and persistence of entering college students, was implemented and evaluated at Kingsborough Community College in Brooklyn from 2003-2005.

Learning communities aim to improve college student success, particularly for historically underrepresented groups, by placing incoming students in small cohorts with whom they take core courses. These models are thought to provide more support for students, accelerate their progress, and improve their retention and completion. They represent a strategy to address the low completion rates

of community college students, and the particularly low success rates of underprepared students who must take developmental-level courses.

Kingsborough first implemented a learning communities program with its English as a Second Language (ESL) students in 1995, and later expanded the learning communities structure to include non-ESL students in specific career majors. The college observed positive early outcomes from these programs, which prompted their interest in participating in MDRC's demonstration project and vastly expanding their learning communities.

The Kingsborough Opening Doors Learning Communities program aimed to impact both students' short-term and long-term academic outcomes and their satisfaction with the college experience. First-semester college students were placed into clusters of up to 25 students, with whom they shared two academic courses and an orientation course. The students also received enhanced academic counseling and tutoring, along with vouchers to defray the costs of textbooks. A slightly revised version of the Opening Doors Learning Communities program is still in operation at Kingsborough today, and is being expanded to serve 80% of incoming freshmen by 2010.

#### **Key Findings:**

Opening Doors improved participants' course-passing rates, average number of credits earned, and GPAs during the program semester. Few of these academic outcomes persisted during additional semesters. Participants passed more quickly through developmental English requirements and were more satisfied with their overall college experience.

- OD participants were significantly more likely to report positive feelings of engagement, integration, and using critical thinking than the control group, and to rate their college experience as good or excellent after 12 months.<sup>22</sup>
- During the program semester, 43% of OD students passed all their courses, compared to 33% of control students.<sup>23</sup>
- OD participants were also 7 percentage points more likely to receive GPAs of 3.0-4.0 during the first semester than the control group.<sup>24</sup>
- Participants earned an average of 1.2 more credits during the first semester.<sup>25</sup>
- OD did not have an impact on persistence at Kingsborough in the first two post-OD semesters, but participants were 5 percentage points more likely to persist to a third post-program semester.<sup>26</sup>

<sup>22</sup> The differences are statistically significant at the 1% level.

<sup>23</sup> Ibid.

<sup>24</sup> The differences are statistically significant at the 5% level.

<sup>25</sup> The differences are statistically significant at the 1% level.

<sup>26</sup> The difference is statistically significant at the 10% level.

- Overall, OD students earned an average of 2.4 more credits during the 4 semesters of the study than the control group. The effect on credits earned was evident particularly during the program semester and, to a lesser extent, in the first post-OD semester.
- OD significantly increased students' likelihood of attempting and passing either of the English skills assessment tests (reading or writing) during the OD semester. OD participants were 11 percentage points more likely to attempt either of the assessment tests,<sup>27</sup> and 6 percent more likely to pass both assessment tests by the end of the semester.<sup>28</sup> The program had the most substantial impact on the writing test.
- OD students who had initially failed one English assessment test were more likely to pass developmental English and move onto Freshman English I than the control group. They were also more likely to pass Freshman English I.<sup>29</sup>
- Among students who had initially failed *both* English assessments, participation in OD increased the likelihood of passing both English tests by the end of the first post-program semester.<sup>30</sup>
- OD did not increase the likelihood of passing English classes for students who had passed both English assessment tests before starting the program.
- There were no meaningful differences in impacts on different subgroups by race and achievement. Impacts were slightly larger for men than women.
- OD did not have a meaningful impact on overall student health and wellbeing.

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#### **Program Population During the Demonstration Period:**

- Kingsborough is one of the 6 community colleges in the City University of New York (CUNY) system and serves 35,000 students.
- The program targeted full-time, incoming freshmen who planned to take daytime classes.
- Eligible students were between the ages of 17-34.
- ESL students were excluded, as were students in specific career majors (accounting, business, mental health, and early childhood education) during the first year of the study, as these students had their own learning community programs.
- All students who enter the CUNY system must take reading, writing, and math placement tests; students who do not pass these tests must take developmental, noncredit courses in order to be allowed to retake the tests, and to earn an Associate's degree or transfer to a 4-year college. In 2003, when the study began, only 18% of incoming Kingsborough students passed all 3 placement tests.

#### **Program Components:**

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<sup>27</sup> The difference is statistically significant at the 1% level.

<sup>28</sup> The difference is statistically significant at the 5% level

<sup>29</sup> Ibid.

<sup>30</sup> The difference is statistically significant at the 10% level.

Curriculum/instruction:

- First-semester students took 3 clustered courses: English, an academic content course required for a student's major (such as health or psychology), and a one-credit freshman orientation course.
- The courses were block-scheduled on a Monday-Thursday week, and they lasted for one 12-week semester.
- These classes were limited to the 25 members of each Learning Community, while other freshmen content courses typically enrolled 30-35 students.
- Students in lower-level developmental courses typically did not take any additional, un-clustered courses in the first semester; other students typically took at least one non-Opening Doors class.
- Approximately three quarters of the English classes in the Opening Doors program were at the developmental level; the other 25% of students took credit-bearing English classes.
- The freshman orientation course covered academic skills, such as time management and study skills, as well as college familiarity and career exploration. It was offered to all Kingsborough students as an optional course, but it was required for Opening Doors students.
- Instructors had reduced teaching loads, so they had more time to assist Opening Doors students. They were also compensated for pre-semester planning time.
- Faculty teams met before each term and many often meet regularly throughout the semester.
- Faculty partners gave some joint assignments, and most use a common grading scheme. During the demonstration, some learning communities integrated content across courses more fully than others.

Student Supports:

- Opening Doors freshman orientation classes were taught by Opening Doors case managers, who worked with other faculty to address student barriers and identify areas of concern. Typically, each case manager had approximately 75-100 students through her different classes, while regular freshman counselors had a caseload of approximately 500 students. Opening Doors case managers met with students individually for both academic and personal advising, and made referrals to the counseling center.
- Tutors were assigned to each learning community and regularly attended the English class and often the content class.
- Students were given a textbook voucher of \$150 for use at the campus bookstore. They were also given \$75 vouchers for the six-week inter-term module following the program semester.

Structural:

- Students had a mini "graduation" celebration from Opening Doors after the first semester.

- The 6-week inter-term session following the program semester offered a transition period into the regular college. Students could take additional, regular classes and still receive case management.
- Close collaboration took place between the Academic Affairs and Student Services divisions of the college.

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**Evaluation Overview:** The multisite Opening Doors study was conducted by MDRC, a group of scholars from the MacArthur Foundation-funded Research Network on Transitions to Adulthood, and an expert on the relationship between education and health at Princeton University. This study represents the first large-scale community college research to use an experimental design. Students at each site who met the program's eligibility criteria were randomly assigned to receive either the Opening Doors program or the college's regular services.

The Opening Doors Learning Communities program was implemented and evaluated at Kingsborough Community College from 2003-2005. The evaluation used a random assignment methodology; the researchers collected data on study participants at the beginning of their college experience and over a 4-semester period.

**Evaluation Population:**

- The total study population was 1,534 students, which included the program group and a control group that was not offered the opportunity to participate in Opening Doors. The population included 4 cohorts of students who entered the college as freshmen in fall 2003, spring 2004, fall 2004, and spring 2005.
- 38% of study participants were African American, 27% were white, and 20% were Latino.
- The participants were 55% female.
- 79% of participants were between the ages of 17 - 20.
- 71% of students had earned a high school diploma before entering Kingsborough, and 29% had earned a GED.
- 28% of students came from households that received some public assistance.
- 40% of participants were foreign born.
- Only 29% had passed both the reading and writing placement tests upon enrollment.
- The students reported that they were generally healthy and had strong mental health at the baseline period.

**Study Methodology:**

- The study used a longitudinal, experimental design.

- Participants were recruited during early registration or large registration sessions, and they were given a \$20 transit card as an incentive.
- Data sources included a student baseline questionnaire, college transcripts, assessment tests, the National Student Clearinghouse, the Opening Doors student survey administered 12 months after random assignment, and a smaller Kingsborough Community College student survey administered in fall 2004.
- The Opening Doors 12-month survey examined integration at the college, engagement, types of knowledge that students were using, and acquired academic and work skills. It also assessed health and wellbeing, through measures of outlook, social support, civic engagement, antisocial behavior, smoking, illegal drug use, stress, and self-rated health.
- Additional sources of data included a survey of faculty of the Opening Doors program, as well as field interviews with administrators, faculty, staff, and 23 students.
- The evaluators compared the outcomes for the program group and the control group over the study period. The comparisons controlled for the baseline number of English assessments passed by each student, as well as the term of entry into the college.
- Faculty members who taught in the program during the fall 2004 semester were surveyed.

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**Funding:**

- The evaluation was funded by 13 major foundations and 3 government agencies: the Department of Education, Department of Labor, and the National Institutes of Health. The college received special funding from the Robin Hood Foundation to implement the Opening Doors Learning Communities.
- Cost: the initial program cost was \$1,000 per student per semester, including faculty training costs. Later program costs were estimated at \$500 per student per semester.<sup>31</sup>

**Policy Implications:**

*This section does not necessarily reflect the views of the researchers and program contacts; these are the interpretations of AYPF, based on the program and evaluation.*

Comprehensive Support Systems at the Postsecondary Level: Policymakers should recognize the importance of comprehensive student services in addressing common barriers to college success and completion. Community colleges need the resources to expand the support structures available to incoming students and to reduce the caseloads of freshman advisors, counselors, and tutors. Professional development for college faculty and staff may play an important part of building a culture

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<sup>31</sup> Singer, Rachel (20 May 2005). Washington, DC: American Youth Policy Forum.

of support for youth who enter college under-prepared or at-risk of dropout. Public funding sources could assist postsecondary institutions in building their institutional capacity to serve all of their students.

Addressing the Hidden Costs of College: Opening Doors provides textbook vouchers to help students defray the high cost of textbooks. The prices of books and other supplies can impede low-income students' academic success, as they may avoid purchasing the necessary texts. Policymakers should consider strategies to provide targeted financial assistance with these hidden costs of college.

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**Upward Bound Math-Science**

<b>Population Served</b>	High school students
<b>Foundation for Success (Inputs)</b>	<ul style="list-style-type: none"> <li>• Academic knowledge</li> <li>• Academic success behaviors</li> <li>• Technical knowledge and skills</li> <li>• College and career knowledge</li> <li>• Goal-setting</li> </ul>
<b>Evaluation</b>	Quasi-experimental study of high school and postsecondary outcomes. The retrospective analysis used administrative data to compare UBMS participants to matched non-participants.
<b>Findings</b>	Improved high school grades in math and science; increased likelihood of completing chemistry and physics in high school, enrolling in 4-year institutions, majoring in math and science, and completing a 4-year degree in math and science.
<b>Elements of Success</b>	<ul style="list-style-type: none"> <li>• Rigorous curriculum</li> <li>• Increased tutoring</li> <li>• Project-based learning</li> <li>• Residential program</li> <li>• Physical program location on a college campus</li> <li>• Increased college counseling</li> <li>• Low student-teacher ratio</li> <li>• Expanded learning opportunity</li> <li>• Secondary- postsecondary partnerships</li> </ul>

**Overview:** The U.S. Department of Education developed a math and science initiative within Upward Bound (UB) to address the underrepresentation of low-income and minority students in math and science careers. Added to the federal TRIO program in 1990, Upward Bound Math-Science (UBMS) provides grants to institutions to develop college preparatory programs geared toward these fields. Like regular UB, the program features academic enrichment opportunities offered afterschool and during the summer, and most projects are hosted by 2- and 4-year colleges and universities. UBMS is unique in its emphasis on applied math and science courses that include laboratory, computer, and field site experience.

**Key Findings:**

Overall, the Mathematica evaluation found that UBMS improved high school grades in math and science, and had a significant, positive impact on participants’ rates of completing chemistry and physics in high school, enrolling in 4-year institutions, majoring in math and science, and completing a 4-year

degree in math and science. The RTI report found that increased length of participation in UBMS was associated with higher postsecondary enrollment rates.

*The findings reported in this section are drawn from two evaluations: the Mathematic study refers to Olsen and Seftor, et al. (2007) and the RTI Study refers to Knapp, Hauer and Mason (2008). An overview of each of these evaluations, along with information on their study populations and methodologies, is presented in a later section of this profile.*

### **Findings for Mathematica Study:**

- UBMS produced higher grades in high school math and science courses, as the average GPA in math courses increased from 2.7 to 2.8, and the average GPA in science courses increased from 2.7 to 2.9.<sup>32</sup>
- Participants were 10% more likely to take chemistry and 15% more likely to take physics in high school.
- The program had a particularly strong effect on high school grades and course-taking for Hispanic students. The rates at which Hispanics took chemistry and physics increased by 17% and 27% respectively, while the rates at which African Americans took these subjects increased by a more moderate 7%.<sup>33</sup>
- UBMS increased enrollment in four-year colleges and universities from 71% to 82%. The percentage of students attending the most selective colleges rose from 23% to 33%.<sup>34</sup>
  - The impact on enrollment rates and graduation from 4-year colleges was particularly strong for women, while the impacts were insignificant for men.
- UBMS was associated with a 10% increase in the rate at which students majored (or planned to major) in math or science fields.
  - Effect was stronger for men than women.
- Preliminary findings indicate that UBMS increased the students' likelihood of completing a 4-year degree in math or science from 6% to 12%.

### **Findings for RTI Study:**

- The overall college enrollment rate of UBMS participants expected to graduate in 2004-05 was 86%.
- College enrollment rates were positively associated with length of program participation. College enrollment for UBMS students who participated for 11 months or less was 80%, compared with 94.3% for students who participated for 36 months or more.
- Students who remained in the program until high school graduation had much higher college enrollment rates (95%) than those who left the program (81%).

<sup>32</sup> All findings in this section are statistically significant at the 1% level, unless otherwise noted.

<sup>33</sup> The difference is statistically significant at the 5% level.

<sup>34</sup> This finding is not statistically significant.

- 19.9% of UBMS participants enrolled in postsecondary education at the same institution that hosted their UBMS project.

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### **Program Population/Eligibility:**

- As of Fiscal Year 2007, there were 126 UBMS projects nationwide, serving 6,808 students. The average project size is 54 students per year.<sup>35</sup>
- At the time of the Mathematica study, UBMS participants were 42% African American, 27% white, 15% Latino, 8% Asian, and 5% Native American.<sup>36</sup>
- As with regular UB, at least two thirds of each project's participants must belong to families classified as low-income (no greater than 150% of the poverty level) or be potential first-generation college students. The application process also considers interest in math or science.
- UBMS serves students in grades 9-12 and tends to serve older students than the regular UB program does. For example, 35% of UBMS participants enter the program prior to 10<sup>th</sup> grade compared to 50% for UB participants.
- Data reported by UBMS projects suggest that UBMS students enter the program with higher average grades than students in regular UB.
- Participants are often recruited from other TRIO programs.

### **Program Components:**

- Academic enrichment and college preparation activities take place during both the school year and the summer.
- Most academic enrichment takes the form of single-subject classes, particularly in advanced science, technology, engineering and math (STEM) courses such as Algebra II, geometry, pre-calculus, biology, physics, chemistry, and computer software. Many programs also provide classes in English and other subjects.
- Courses often provide opportunities for students to reinforce the subjects they are learning in school through hands-on activities, experiments, field trips, and guest lectures, as well as site visits to employers in STEM fields.
- The projects also provide assistance with college and financial aid applications, as well as tutoring in laboratory science and mathematics through pre-calculus.
- The 6-week summer program provides an intensive, residential experience on a college campus. Students live in dorms and take classes in a wide array of subjects, with an emphasis on math

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<sup>35</sup> U.S. Department of Education, 2008.

<sup>36</sup> Mathematica, 2007.

and science. Most students spend 29 hours per week in group instruction and 11 hours per week in tutoring, with an average of 240 academic hours per summer.<sup>37</sup>

- UBMS projects tend to have lower ratios of participants to staff than regular UB projects. Most staff are highly educated and have experience in the fields of math or science.<sup>38</sup>

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### **Overview of Evaluation:**

Mathematica (2007): In conjunction with its long-term evaluation of regular UB for the Department of Education, Mathematica Policy Research, Inc. also began conducting an evaluation of UBMS in 1997. This quasi-experimental study of high school and postsecondary outcomes was based on a random sample of students who participated in UBMS between 1993 and 1995. The retrospective analysis used administrative data to compare UBMS participants to matched non-participants, controlling for student background characteristics, educational achievement, and whether or not students had also participated in the regular UB program.

RTI (2008): RTI was contracted by the Department of Education to prepare a report on UB and UBMS Program Outcomes for Participants Expected to Graduate High School in 2004-2005. This longitudinal analysis determines the postsecondary enrollment rates of UBMS participants who were expected to graduate in the 2004-2005 school year, using data from 1999-2000 through 2005-06. This study does not include a comparison group.

### **Evaluation Population:**

#### Mathematica Study Population:

- The sample consisted of 689 UBMS participants and 988 comparison students from the regular UB evaluation conducted separately by Mathematica.
- The authors state that the general UBMS population is statistically similar to the sample.

#### RTI Study Population:

- The data set includes the 2,936 UBMS participants who were expected to graduate high school in the 2004-05 school year and who attended one of the 98% of UBMS programs that submitted Annual Performance Reports.

### **Study Methodology:**

#### Mathematica Study Population:

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<sup>37</sup> Ibid.

<sup>38</sup> Ibid.

- The researchers selected a random sample of students who had participated in UBMS between 1993 and 1995 at the 65 UBMS projects that had operated in this period and continued to operate in the late 1990s.
- A matched comparison group was identified from members of the regular UB evaluation. These nonparticipants provided an accessible comparison group, as their outcomes had already been tracked for the other study.<sup>39</sup>
- The UBMS students who *had not* previously participated in regular UB were matched with members of the control group from the original evaluation (students who had applied to regular UB but were not selected for participation).
- The UBMS students who *had* previous exposure to UB were matched with members of the treatment group from the regular UB evaluation.
- The propensity score matching process controlled for student demographics, previous academic achievement, the level of science and math courses taken at the baseline point, and other sources. The researchers also used regression analysis to adjust for small remaining baseline differences between the treatment and control groups.
- Baseline data sources included high school transcripts and student surveys.
- Follow-up data collection consisted of a survey administered between April 2001 and December 2002, which examined outcomes 5 to 7 years after scheduled high school graduation. A small monetary incentive was given to participants who completed the survey. The response rate was 81% for UBMS participants and 76% for the comparison group.

RTI Study Population:

- The researchers used UBMS projects' Annual Performance Reports from 2000-01 to 2005-06 school years, as well federal financial aid information, to determine postsecondary enrollment rates.

**Funding:**

- UBMS is funded by the U.S. Department of Education, which also funded the Mathematica evaluation.
- The UBMS appropriation was approximately \$34 million as of Fiscal Year 2007. The average cost per participant served was \$4,991 per year.<sup>40</sup>

<sup>39</sup> The researchers acknowledge a selection bias, as treatment and comparison students were not necessarily similar in terms of career aspirations, and interest or aptitude in math and science.

<sup>40</sup> U.S. Department of Education, 2008.

**Policy Implications:**

*This section does not necessarily reflect the views of the researchers and program contacts; these are the interpretations of AYPF, based on the program and evaluation.*

**STEM Preparation:** Upward Bound Math-Science offers an encouraging example of a program that increases the number of students pursuing science, technology, engineering and math (STEM) careers. Business and education leaders have drawn attention to the critical need to provide more students with strong preparation in the STEM disciplines if the US is to remain competitive in an increasingly innovation-based global economy. Policy advocates have pointed to the particularly low numbers of students of color and women receiving advanced training in high-need fields like engineering. UBMS provides students from underrepresented groups with an intensive focus on key curricular areas, along with small class sizes, increased academic support, and project-based learning. Policymakers should invest in programs that incorporate these strategies to enhance STEM education.

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