UMASS Dartmouth

A Report on the

New Bedford & Fall River
DROPOUT PREVENTION
Planning Initiative

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URBAN INITIATIVE

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New Bedford Public Schools

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URBAN INITIATIVE

Our Mission

The University of Massachusetts Dartmouth stands at the forefront of many of the major public policy issues that currently confront the regional communities we serve and the entire Commonwealth. With its thumb on the pulse of a wide range of issues including environmental and sustainability concerns, increasing regional educational achievement, and innovative approaches to energy conservation, the University has a history of uniting its educational, research, scientific, and technological resources toward positive efforts that contribute to the progress of our state.

Recognizing higher education's further potential to pursue and promote constructive statewide growth, the University's Chancellor, Dr. Jean F. MacCormack, commissioned the establishment of the Urban Initiative in November 2007, specifically to act on behalf of the many older urban communities throughout the Commonwealth that continue to struggle with the transition from manufacturing to today's knowledge-based economy. Since then, the urban revitalization movement throughout the state has garnered significant momentum and has earned the Urban Initiative a prominent role in its progression.

Considering that the University serves a region that contains several such cities, including Fall River, New Bedford, Brockton, and Taunton, the existence of the Urban Initiative makes not only regional, but also statewide sense. The presence of various policy challenges that have hindered progress in these urban areas represents an opportunity recognized by Chancellor MacCormack to further embed and engage the University in these and other communities in order to promote and affect the necessary policy changes that can lead to their revitalization and an improved quality of life for their residents.

The Urban Initiative's affiliation with the Center for Policy Analysis, a well-established research unit of UMass Dartmouth, is in keeping with the Center's long-held desire to bring a greater focus on urban policy to its own work.

The Urban Initiative's mission encompasses a fusion of research, project development and implementation, technical assistance, and policy analysis that supports the work of municipalities, state and local agencies, private and non-profit entities, and other organizations. Specifically, the Urban Initiative seeks to accomplish these goals by engaging our elected leaders, issuing research reports, hosting events and conferences, offering technical assistance and training to policy leaders, encouraging civic participation, and linking the University's resources to the region and beyond.

Fields of Focus

- ✧ Economic Development
- ✧ Workforce Development
- ✧ Municipal Organization and Finance
- ✧ Leadership

- ✧ Urban Education
- ✧ Urban Policy
- ✧ Civic Engagement
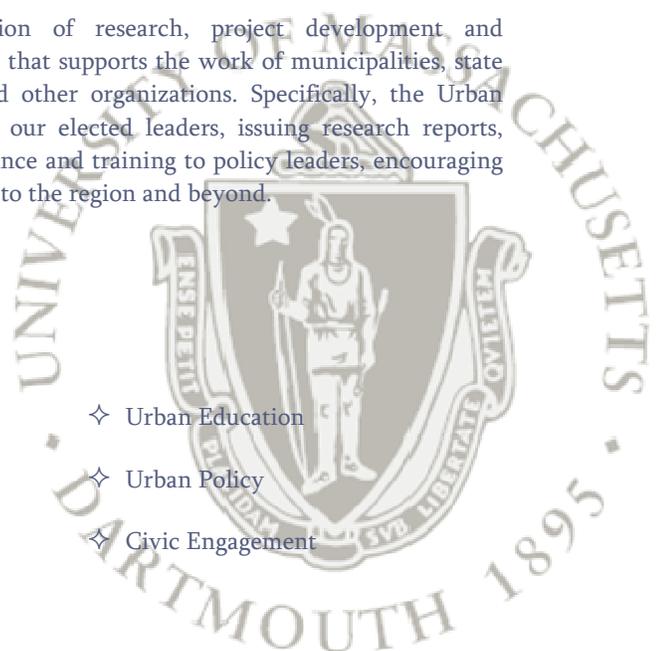
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Table of Contents

Introduction & Background

In November of 2009, the Massachusetts Department of Elementary and Secondary Education (ESE) issued the second round of its *State Targeted Assistance* grant program to urban districts participating in the state's Dropout Prevention and Recovery Work Group. The program provides an opportunity for these districts to continue their planning efforts around dropout prevention and initiatives to increase graduation rates among at-risk students. Comprised of 18 school districts and ESE, the Work Group includes some of the largest districts (in terms of student enrollment) in the state, including Fall River and New Bedford. These districts' dropouts alone represent 53 percent of the state's total number of dropouts during the 2008-09 school year. This partnership between ESE and the state's struggling urban school districts represents a significant investment of both time and resources on the part of state education officials and it signifies an awareness of and sensitivity toward the pressing needs that these districts have as they endeavor to not only close achievement gaps and raise educational attainment, but to also ensure successful graduation for all students.

Given this particular grant opportunity, the school districts of Fall River and New Bedford (both located approximately 15 miles from each other in the SouthCoast[1] region of Massachusetts) decided to partner with the Urban Initiative at the University of Massachusetts Dartmouth to undertake a planning process that would provide both districts with a common platform from which to pursue the development of a data-driven strategy for reducing dropout rates based upon the establishment and implementation of a dropout early warning system. The Urban Initiative readily embraced the concepts of partnership and leadership in this planning project given its status as the first national satellite of the renowned National Dropout Prevention Center (NDPC) at Clemson University and the publication of its landmark research report, *Dropout Prevention in the SouthCoast*.

Issued in April of 2009 and commissioned by the SouthCoast Development Partnership, *Dropout Prevention in the SouthCoast* analyzed educational attainment data as well as dropout and graduation rates in the fifteen communities that make up the SouthCoast region. The goals of this report were to assess the economic and social implications of low educational attainment and high dropout rates in the region and provide specific recommendations – based upon the
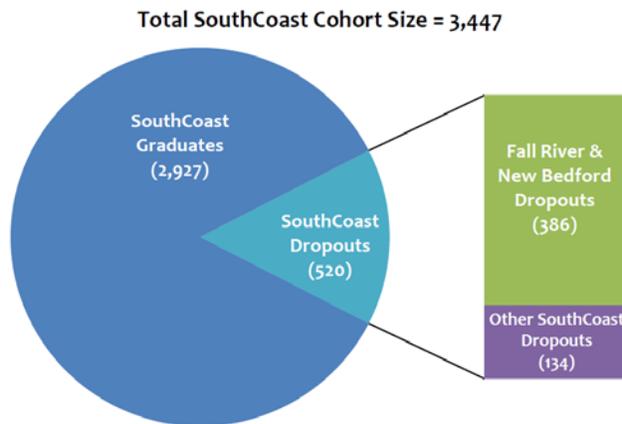
NDPC's list of Fifteen Best Strategies for Dropout Prevention – which the region, its stakeholders, and schools could focus on in the near future. Although hypothesized prior to its publication, *Dropout Prevention in the SouthCoast* both confirmed and quantified the magnitude at which dropout rates in Fall River and New Bedford are driving the overall educational attainment and dropout problem confronted by the region. Recent data released by the DESE for the 2008-09 school year indicates that the regional trends observed during the writing of this report persist, and that in terms of both the annual dropout rate and the 4-year cohort dropout rate, Fall River and New Bedford's dropouts represent three-fourths of all dropouts in the entire SouthCoast region (See Figures 1 and 2).

In order to help districts accurately track dropout rates and changes in student enrollment, ESE implemented the Student Information Management System (SIMS), an on-line, standardized data collection and reporting application for all public schools in Massachusetts. With the implementation of SIMS in the 2001-02 school year, school districts have been able to better track student enrollment, disenrollment, and reenrollment in other public school districts in the state. In addition, putting the SIMS system into action coincided with the state's tracking of four-year cohort graduation rates, which is required by the No Child Left Behind Act (NCLB) and by a National Governors Association compact signed by the Governor of Massachusetts.[2]

The use of SIMS has allowed for greater accuracy and standardization in data collection and reporting. SIMS assigns each student enrolled in a Massachusetts public school district a unique numeric identifier, which means that while a student may transfer from one in-state school to another, he or she will retain a single information profile in the state's records. One of the greatest improvements this system has offered is the ability to track students who leave one public school and move to another school or district in the state without reporting their true status. Previously, students who did not inform school administrators of their intention to move to another community were recorded as dropouts. Oftentimes, the only way a school would ever find out if a "missing" student had actually transferred to another school district was when the student's new school would contact his or her previous school for records or transcripts.
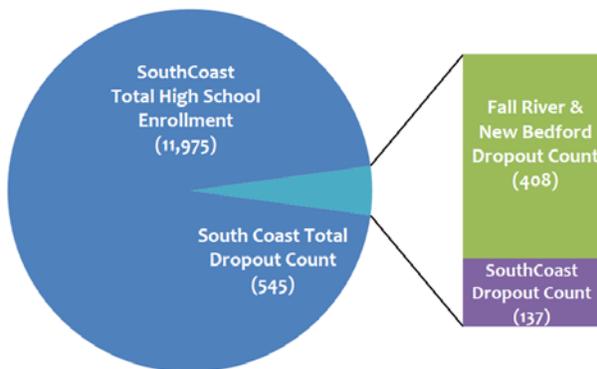
Under SIMS, all students who are reported as dropouts are checked against data submitted by all other districts in

Figure 1: Four-Year Cohort Dropout Data for the SouthCoast, Fall River, & New Bedford (Class of 2009)

Total SouthCoast Cohort Size = 3,447

SouthCoast Graduates (2,927)

SouthCoast Dropouts (520)

Fall River & New Bedford Dropouts (386)

Other SouthCoast Dropouts (134)

Source: Massachusetts Department of Elementary & Secondary Education, School & District Profiles, http://profiles.doe.mass.edu/

Figure 2: Annual Dropout Rate Data for the SouthCoast, Fall River, & New Bedford (2008-09 School Year)

SouthCoast Total High School Enrollment (11,975)

South Coast Total Dropout Count (545)

Fall River & New Bedford Dropout Count (408)

SouthCoast Dropout Count (137)

Source: Massachusetts Department of Elementary & Secondary Education, Statistical Reports: Dropout Rates in Massachusetts Public Schools, http://www.doe.mass.edu/infoservices/reports/dropout/0809/default.html

the state. If a student reported as a dropout by one district is found to be enrolled in another district, the student is no longer considered a dropout but rather as a "transfer."[3] Another important advancement is that SIMS has allowed the state to become much more accurate in tracking the enrollment status of students who take five years to graduate. Previously, a student who required an extra year to complete high school or decided to enroll in a GED program was counted as a dropout. SIMS, however, is simply a data collection, management, reporting, and storage system. Its capabilities do not allow schools and districts to easily track trends or to enter data that would estimate a particular student's risk level.

Nationally, states are now required to report graduation rates for cohorts of students who began the 9th grade at the same time. SIMS

allows Massachusetts to report both 4-year cohort graduation rates, which measures the number of students who began the 9th grade in any given year and received their diploma four years later, and 4-year dropout rates, which calculates the number of students who began the 9th grade in any given year and permanently discontinued their education over the course of the next four years. Dropout and graduation data made available by ESE for the last four school years (2005-06 through 2008-09) indicate that that Fall River and New Bedford's 4-year cohort dropout rates have traditionally been higher than 20 percent, with Fall River's rates exceeding 30 percent for the classes of 2006, 2007, and 2008. These cities' cohort dropout rates are consistently more than double the average rate for the entire state as well as other communities in the SouthCoast. Figure 3 demonstrates that when dropout data for Fall River and New Bedford is excluded from the SouthCoast sample, regional dropout rates are actually lower than state averages. Including both cities increases dropout rates two-fold, lending further credence to the idea that the region's dropout problem is driven considerably by what happens in the SouthCoast's urban communities.

Four-year graduation rates in Fall River and New Bedford over the past four school years have also persistently remained between 50 and 60 percent. In 2009, however, Fall River did see an increase of 6.5 percentage points in their graduation rate from 56.0 percent to 62.5 percent. When compared to the rest of the state, Fall River and New Bedford have graduation rates that are significantly lower and when their data is excluded from the SouthCoast's sample data, regional graduation rates increase by more than 10 percentage points and actually exceed state graduation rates by about 5 percentage points (See Figure 4). Again, these observations lead to the conclusion that dropout rates in the SouthCoast's two cities play a considerable role in reducing regional graduate rates and that these communities warrant significant investments in order to mitigate the effects of higher dropout rates in Fall River and New Bedford.
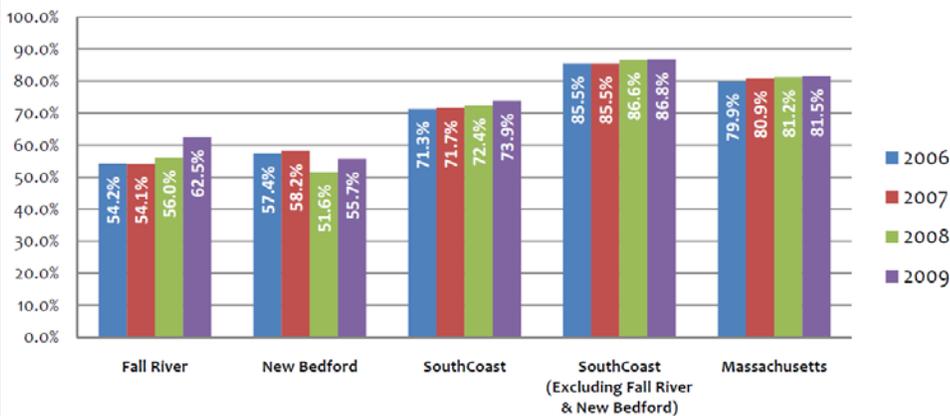
Figure 3: *Four-Year Cohort Dropout Rates*
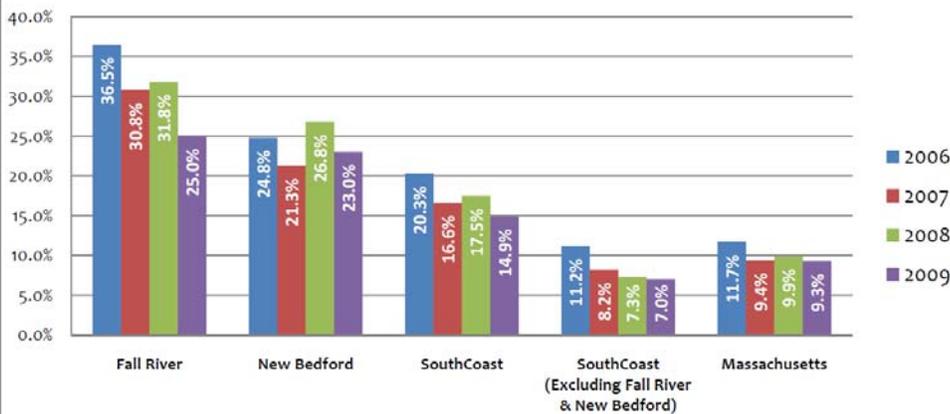
Source: Massachusetts Department of Elementary & Secondary Education, School & District Profiles, http://profiles.doe.mass.edu/

State Data found at: Massachusetts Department of Elementary & Secondary Education, *Statistical Reports: Dropout Rates*, http://www.doe.mass.edu/infoservices/reports/dropout/

Figure 4: *Four-Year Cohort Graduation Rates*

Source: Massachusetts Department of Elementary & Secondary Education, *School & District Profiles*, http://profiles.doe.mass.edu/

State Data found at: Massachusetts Department of Elementary & Secondary Education, *Statistical Reports: Graduation Rates*, http://www.doe.mass.edu/infoservices/reports/gradrates/

Context, Purpose, & Evolution of the Planning Project

In addition to the funds provided by the DESE, this dropout prevention planning project was also made possible through a generous grant from the Community Foundation of Southeastern Massachusetts, which through its philanthropic work has made great strides in achieving its mission of improving the quality of life for those who live in this region of the state. The Community Foundation has long been an advocate of collaborative efforts among communities in this region and has demonstrated particular enthusiasm for initiatives that are focused on educational improvements in the cities of Fall River and New Bedford.

In its initial proposal to Fall River, New Bedford, and the Community Foundation, the UMass Dartmouth Urban Initiative stated that the goals of the Fall River - New Bedford

Dropout Prevention Interim Planning Project were to 1) engage stakeholders in a cross-district planning process, 2) prepare the districts to apply for significant funding to facilitate the implementation of a dropout early warning system (something that was explicitly recommended in *Dropout Prevention in the SouthCoast*), and 3) develop a long-term funding strategy to support the resulting dropout prevention plan. These goals would be achieved by convening stakeholders, gathering data, reviewing relevant literature, analyzing local needs, and producing a report to accompany future grant applications made jointly by the two districts.

In the course of conducting research as a part of this project the Urban Initiative learned of an opportunity for significant federal funds through the Department of Education's High School Graduation Initiative (HSGI) grant program, the purpose of which is to enhance and expand effective early identification, prevention, and intervention efforts in struggling school districts across the country. The grant program was specifically geared toward communities with high schools that have annual dropout rates above the state average or middle schools that feed into high

schools with annual dropout rates higher than the state average.

Under *Absolute Priority 1* of the HSGI, project proposals were sought that intended to "establish, enhance, or expand effective early intervention programs designed to identify at-risk students and prevent such students from dropping out of school [as well as] effective programs to identify and encourage youth who have already dropped out of school to reenter school and complete their secondary education."[4] Summarily, the grant allowed school districts to fund early warning systems within the context of a larger proposal for retaining at-risk students and recovering those who have already dropped out.

Given the purpose of the dropout planning process to produce and design a strategy for reducing dropout rates that would be rooted in the application of an early warning system, the Urban Initiative and the Superintendents of Fall River and New Bedford agreed to work cooperatively as a part of the partnership already established under this planning initiative to move forward and attempt to achieve what the planning process had originally intended, which was the pursuit of funding for a dropout early warning system and targeted strategies that would reduce the dropout rates in each city.

As a result, the Urban Initiative's role within the project expanded beyond the original scope in order to provide support for each school system to develop a timely application, which was submitted on July 28, 2010. While each district agreed to apply jointly for funding under the HSGI grant initiative and support a common set of dropout prevention and recovery programs, the Urban Initiative assumed responsibility for writing the grant proposal and designing several of the dropout prevention strategies that became a part of the joint-submittal to the Department of Education (DOE). In addition, pursuant to the DOE's programmatic rules requiring that only one school district serve as the applicant, the New Bedford School Department agreed to undertake that responsibility on behalf of the collaborative for the purpose of submitting application materials through the DOE's online e-grants portal.

In combining University resources with a collaborative effort involving both the Fall River and New Bedford school systems, the Urban Initiative believes it has created an alliance that has brought strength to the partnership's joint funding request and addresses the regional nature of the dropout problem as identified in the previous section of this report and in *Dropout Prevention in the SouthCoast*.

State Data & Early Warning System Capacity

As noted previously, the Department of Early and Secondary Education implemented its statewide Student Information Management System (SIMS) in 2001. SIMS assigns every student in the state a unique identification number and requires that school districts across the Commonwealth report certain demographic and educational indicators to ESE using a secure on-line application. Aided by this new system, the DESE began to report cohort graduation rates in the winter of 2006, demonstrating the rates at which students who entered high school during the 2003-04 school had graduated or dropped out over the course of four years.

ESE quickly recognized that in order for graduation and dropout rate data to be relevant to local dropout prevention efforts, it needed to provide something besides data for students who had already graduated or dropped out several months or several years before the release of such data. Instead, local prevention efforts required an early warning mechanism that would regularly alert teachers and school administrators of which students were at risk of dropping out, allowing them to direct resources and interventions toward the most acute needs.

In May of 2008, ESE responded to these needs by unveiling the first version of its "Early Warning Indicator Index" (EWI) at a meeting of the Urban Superintendents Network. This initial version of the index included eight indicators associated with a student's probably of dropping out:

1. A student's scaled score on the Grade 8 English language arts (ELA) Massachusetts Comprehensive Assessment System (MCAS) test,
2. A student's scaled score on the Grade 8 Math MCAS test,
3. Student failure of the ELA MCAS test in either of the last two years for which data is available,
4. Student failure on the Math MCAS test in either of the last two years for which data is available,
5. Being overage in Grade 9,
6. Student retention in Grade 9,
7. The number of days a student was absent in Grade 8 (or Grade 9 if they are repeating), and
8. The number of times a student was suspended in Grade 8 (or Grade 9 if they are repeating).[5]

It is important to note that the EWI continues to be limited to the 24 school districts that participate in the Urban Superintendents Network.[6]

After performing additional statistical analyses of cohort data from schools in the Urban Superintendents Network, ESE revised its EWI in June of 2008 and was able to reduce the number of indicators from eight to just three without losing a significant level of predictability present in the previous model. The indicators used in this second iteration of the EWI included:

1. A student's scaled score on the Grade 8 Math MCAS.
2. A student's Grade 9 attendance rate, and
3. The number of times a student had changed schools in Grades 7 and/or 8.[7]

With the hope of understanding the extent to which Grade 8 attendance would correctly predict a student's chances of dropping out, and thereby allow high schools to be aware of each incoming freshman's level of risk and intervene early on, ESE conducted further statistical analyses using Grade 8 attendance as an indicator of dropout risk. According to ESE, while the model using Grade 9 attendance rates was more predictive than the model using Grade 8 attendance, the Grade 8 model still correctly predicted the likelihood of graduating and dropping out of at least 90 percent of students in both the lowest and highest risk categories. These analyses, in addition to ESE's desire that high schools would initiate early interventions for those students identified as being "at-risk," led to the development of the third iteration of the EWI in October of 2008, which included the following four indicators:

1. A student's scaled Grade 8 Math MCAS score,
2. A student's scaled Grade 7 ELA MCAS score,
3. A student's Grade 8 attendance rate, and
4. The number of times a student had changed schools in Grades 7 and/or 8.[8]

In November of 2009, ESE refined its EWI by analyzing data from Grades 7 and 8 for the graduating class of 2008. Their investigation into this data resulted in the development of a fourth version of the EWI that included only 3 indicators:

1. A student's scaled Grade 7 ELA MCAS score,
2. A students scaled Grade 8 Math MCAS score, and
3. A student's Grade 8 attendance rate.[9]

In making this modification, ESE found that this three-indicator model was just as predictive as the previous four-indicator model in determining the likelihood of a student graduating or dropping out within four years. In

addition to this, ESE officials found that while these three indicators had a moderate and positive correlation with student outcomes, the fourth indicator (student mobility) had a weak correlation with outcomes.

As of the writing of this report, ESE is now using a slightly modified EWI model that includes the following three indicators:

1. A student's Grade 8 ELA MCAS score,
2. A student's Grade 8 Math MCAS score, and
3. A student's Grade 8 attendance rate.[10]

In order to determine a student's risk level, student performance on each indicator generates points that are then added together. To create the index, ESE analyzed the middle school performance of students graduating in 2008. The amount of points given on each indicator is based upon percentile groupings set at intervals of five percent: students below the 5th percentile on each indicator are given 20 points, students between the 5th and 10th percentile are given 19 points, students between the 10th and 15th percentile are given 18 points and so on until those above the 95th percentile receive 1 point. Points are then added across the three indicators, giving students aggregate scores that can range between 3 and 60. Table 1 shows how each of the five risk levels are correlated to the index values in the point system:

Index Values and Risk Level[11]	
Index Value	**Risk Level**
3 - 23 points	Low Risk
24-31 points	Borderline
32-40 points	At-Risk
41-49 points	High Risk
50-60 points	Very High Risk

One of the positive aspects of this EWI evolution and the ongoing refinement of the index is that each year, ESE uses the most recent set of cohort graduation data to fit its statistical analysis between student outcomes and the indicators that affect the likelihood of graduating on-time. This annual process has allowed ESE to identify its own set of characteristics most likely associated with eventual dropout, which currently includes the following 12 variables:

1. Grade 7 ELA MCAS score,
2. Grade 8 Math MCAs score,
3. Grade 7 attendance rate,

4. Grade 8 attendance rate,
5. Grade 9 attendance rate,
6. Age as of September 1st of the prior school year,
7. Low income status,
8. Special education status,
9. English language learner status,
10. Gender,
11. Mobility (number of times student changes schools while in Grades 7 and 8), and
12. Race/ethnicity.[12]

Nevertheless, ESE readily admits that because the development of the EWI involves the use of statewide data to develop the profile of what "at-risk" constitutes, local districts should consider the incorporation of local early warning data to "…further refine the Index and to inform local analyses of graduation and dropout patterns in the district."[13]

One of the key elements in creating a locally relevant early warning system is the use of data to sketch a profile of students most likely to dropout in order to understand and identify the factors that are driving and perpetuating student risk. Not only is this "dropout profile" important for relevance and validity in predicting which students might actually drop out; it also allows districts to understand whether limited resources are being used effectively to target those risk factors that are causing students to leave school before graduating. Moreover, in order to succeed at predicting which students will eventually drop out, it is important to first know something about the types of students who have already done so and the factors that cause them to do so.[14]

While the state's attempt at an early warning system is indeed pioneering and noteworthy, it is very difficult to create a system that readily predicts who will dropout from every school in the state due to the influence of each community's contextual, demographic, and socioeconomic features. The use of only three risk factors is another limitation that may fail to capture a broader range of variables that also impact student decisions to graduate or leave school. These variables include behavior, school-level issues, and factors that affect "non-traditional" dropouts who might perform well academically but have issues with attendance.

Additionally, the collection and dissemination of early warning data for use when a student is on the verge of entering high school (or repeating the 9th grade) fails to acknowledge that the road to dropping out begins well before a student enters high school (or even middle

school). Thus the EWI, as a dropout prevention tool for high schools, may lack the timeliness and sufficiency needed for some students who require interventions much sooner. An effective early warning system must live up to its name, and for many students – particularly those in urban settings – high school is just not early enough to prevent them from choosing to drop out. In order to address these gaps, this report will outline the types of information and data that research argues are the most relevant in the construction of early warning systems.

Local Data Collection & Reporting Capacity

At the local level, New Bedford and Fall River use a variety of data and information management systems that gather and store a wide range of student-level data. While each district maintains its own unique Student Information System (SIS), both have access to and participate in the state's Education Data Warehouse (discussed in subsequent sections of this report) and the state's Early Warning Indicator Index system as a result of information shared through the state-mandated SIMS. In Fall River, district and school personnel use X2's Aspen software solution for maintenance of common student information indicators such as demographics, attendance, schedule, discipline, and grades. New Bedford utilizes the *i*Pass system produced by the Information Marketing Group (IMG) to collect much of the same data that Fall River collects in its X2 system. In both instances, and given the limited capacity of each SIS system, the local SIS is being used simply as a data warehouse and not as an early warning system.

Discussions with district officials revealed that, while a significant amount of data is being collected and made accessible to teachers and administrators, the process is characterized by a lack of consistency across grade and school levels. Moreover, schools are being afforded varying degrees of latitude in terms of what information is collected beyond that which is mandated by the DESE for the purposes of SIMS. This inconsistency often leads to incomplete data for certain students, particularly when elementary-level data is being considered. For example, while elementary schools may be collecting certain data points for their students, it does not mean that middle schools are collecting the same types of data, or that the high school is collecting comparable data to that being collected at the middle school level. As a result, important pieces of information that tell a student's educational story are often lacking.

In addition to discrepancies with data collection procedures, another factor that limits a school's ability to prevent dropout is that neither Fall River nor New Bedford has a formal protocol for determining when a student is classified as being at risk for dropping out. In both districts, risk assessments for possible eventual dropout are conducted entirely by guidance counselors and based upon a review of different variables such as grades, MCAS scores, behavioral narratives, and involvement with the courts or the Department of Children and Families. Without such a protocol, counselors rely on anecdotal assessments of individual risk. In addition, the data counselors use to support these assessments is often outdated, making risk identification reactive rather than preventative in nature. These circumstances may result in providing students with interventions that are unnecessary, inappropriate for their needs, or too late.

Dropout Early Warning Systems: A Rationale

In October of 2009, the Massachusetts Graduation and Dropout Prevention and Recovery Commission, which was chaired by Secretary of Education Paul Reville, released its report entitled *Making the Connection*. In that report, the Commission identified early identification and the development of early indicator systems as a key building block for promoting dropout reduction efforts across the state. While the Commission recognized the work of ESE in creating its pilot EWI (based on four indicators at the time), it noted that "decades of data and research point to the need for a broader picture of students that includes social, health, and educational information." The Commission went on to emphasize the importance of intervention at an early age, which stands to increase the chance of improved outcomes.[15]

In addition to recommending the expansion of ESE's EWI and its replication in all school districts throughout the Commonwealth, the Commission also suggested that school districts be given "guidance and technical assistance on how to incorporate additional risk factors into the existing EWI system, including factors associated with 'educational disengagement' (such as tardiness, truancy, poor classroom behavior, relationship difficulties, chronic health conditions, substance abuse, pregnancy, and family issues), which may be 'high yield' indicators and community/school specific."[16] This particular concern is especially relevant for urban communities like Fall River and New Bedford whose profile of a dropout using local data might look significantly different from a profile created using statewide data.

Moreover, the research indicates that in order for an early warning system to be effective and useful to local school officials and teachers, it must take into account the reality that schools do not exist or operate in complete isolation from the broader community in which they are located. The challenges that communities and families face, such as poverty, unemployment, violence, inadequate health, substance abuse, and parental/family instability eventually become key educational issues for students and schools when they are ignored. Schools with persistently high dropout rates in communities that struggle with these external forces simply cannot limit their assessment of risk to academic performance indicators such as standardized test scores since the problems that limit academic achievement are often rooted in community and family factors.

From the perspective of intervention and recovery, early warning systems that potentially confuse the symptoms with the disease do little to help those charged with developing programs and other mechanisms to keep students in school or bring them back once they've chosen to drop out. For example, a student that exhibits poor academic performance in coursework and on standardized tests may be targeted for a tutoring program. However, this particular student may live in a crime-ridden section of the community and therefore face a troubling home environment that inhibits his ability to learn, complete assignments, or retain information learned during the course of the school day. While tutoring may be helpful to the student, unless the difficult issues faced at home are detected and interventions provided, this student's academic achievement will most likely continue to languish.

In order for an early warning system to be useful and effective it should allow districts to achieve the following goals and objectives in their dropout prevention efforts:

> **Goal 1**: Accurately define and uncover students' problems and needs
> **Goal 2**: Successfully identify interventions and improvement strategies
> **Goal 3**: Effectively target and initiate programs and reforms
> **Goal 4**: Truthfully monitor ongoing efforts and progress with at-risk students

The risk factors that are used to build the system should cover a range of variables across three broad domains identified by Jerald (2006) in a report for Achieve, Inc. and Jobs for the Future. These domains include:

Students' Socioeconomic Background: Research has shown social and family background factors can often increase or decrease a student's risk of dropping out. Such factors can include family income, belonging to a minority group, gender, the number of times a student has transferred schools in the elementary or middle school years, the number of parents in the household, the educational attainment of parents, whether a student has to hold down a job, and whether a student becomes pregnant. It is important to note, however, that some social background indicators are neither good nor bad at predicting dropout, but instead influence the dropout process in complex ways. For example, having a job outside of school can play a negative or even positive role in a student's educational achievement depending upon what kind of job he or she performs.[17]

Students' Educational Experiences: Socioeconomic issues do not tell the whole story. These factors have very little or nothing to do with education and they lay largely outside of the control of educators. Within this domain are two important categories of educational risk factors: *academic performance* (including factors such failure on standardized tests, failure in courses, and grade retention) and *educational engagement* (including factors such as disciplinary problems, truancy, poor classroom behavior, and a lack of participation in extracurricular activities). According to Jerald (2006) factors related to educational experiences are of particular importance to educators and policymakers alike given that they are not only "practical" but "predictive" of eventual dropout. In addition, educational experience factors describe things that are taking place inside the school itself and can often help to guide educators in their selection of interventions.[18]

School Characteristics: Educational experiences and their impact on student decisions to leave school cannot be analyzed without acknowledging the role that school-level factors play in contributing to risk. An array of research has investigated the significance of school-level factors in predicting whether or not students will go on to earn diplomas. The conclusion is quite clear: "Institutions matter as much as individuals, and attending a school with certain characteristics can itself be a risk factor for dropping out." Aside from potential deficiencies in capacity to effectively deal with students who exhibit difficult behaviors or serious mental health or socio-emotional impairments, Jerald (2006) identifies several measurable school-level indicators that can be used to assess the impact of school climate and environment on student risk. These variables include enrollment size, classroom size, opportunities for relationship-building among students and between students and adults, teacher performance, and the type of curriculum used as well as its rigor.[19]

It is undeniable how valuable an effective and customized early warning system can be for local school districts. During the past several years, research has proliferated on the ways in which school districts can use data-driven early warning systems to efficiently and successfully combat dropout. Several key factors are popularizing the use of early warning systems in school districts. First, studies show that school-based factors more accurately predict dropout risk than external, socioeconomic factors. Because these factors are largely based on academic performance and engagement, educators can track them through data analysis and address them with targeted intervention strategies. Second, many of these factors manifest themselves as early as elementary school. If at-risk students are identified this early, they can be quickly targeted by programs to ensure they get back on track before the critical high school years. A third reason for the increasing use of early warning systems in the nation's schools is that the No Child Left Behind Act began requiring schools to collect and analyze longitudinal data in 2001, so many districts already have the infrastructure and information needed to implement an early warning system. As districts are increasingly shifting toward data-driven solutions to issues like dropout prevention, the number of products that provide districts with early warning systems, the sophistication of such systems, and the technology and the support for their use continues to grow.

Along with providing schools the capacity to identify potential dropouts while intervention is still feasible, early warning systems offer districts a number of opportunities to improve overall performance and reduce demands on already limited resources. Systems that track individual student performance over time also provide valuable information related to the aggregate population, which can shed light on problems that are endemic to a school itself (e.g. high rates of failure for particular classes, or high levels of tardiness). Another benefit to schools is that early warning systems, when designed with appropriate benchmarks, will often reduce the number of students engaged in intervention programs by targeting

only those who are truly off-track.[20] Furthermore, the cost to develop and implement an early warning system is typically much less than the cost of a district's intervention programs.

A final but critical benefit of early warning systems is that they allow school systems to engage and build relationships with a variety of stakeholders, many of whom are in a position to facilitate overall achievement (including parents, government and community leaders, and foundations). When early warning systems are easy to use and the data they generate is widely shared, school districts become more transparent and build trust in the community. Districts are also able to better demonstrate their commitment to issues like dropout, and use data to demonstrate the efficacy of their efforts to address them. Finally, early warning systems highlight exceptional challenges faced by districts (e.g. a high refugee population, extreme poverty), emphasizing the need for more resources and community support.

While many early warning systems across the country are still in their early stages and their impacts cannot yet be assessed, several pioneering school districts have made great strides in making data more accessible, improving upon dropout intervention strategies, and bolstering students' academic achievement through the use of early warning systems. The experiences of the public school districts in Chicago and Philadelphia have provided a bulk of the research regarding which factors are most effective in predicting dropout risk. In addition, these districts have produced the earliest results regarding the efficacy of early warning systems as tools for bolstering academic performance and graduation rates. The Chicago Public Schools now use an "on-track indicator," which has allowed schools to identify whether or not a student will drop out with 85 percent accuracy.[21] In Philadelphia, half of all potential dropouts are flagged by the sixth grade. This has led to the creation of prevention and intervention programs for middle schools that aim to get students back on track before high school. In Abbeville, Louisiana, early warning systems identify off-track students every three weeks and after the program's first year in operation, the intervention strategies implemented as a result have helped to reduce the community's ninth grade retention rate by 50 percent.[22] Moreover, the use of advanced information systems has not only proven integral in the development of district-wide early warning systems, but it has also enhanced the effectiveness of the solutions devised to address and target the issues that drive local dropout rates.

Models for Dropout Early Warning Systems

Constructing a predictive and preventative early warning system is a process that is complicated by the fact that no single risk factor or pre-set combination of risk factors can predict with exact certainty exactly who will eventually drop out from school. Moreover, simply identifying risk factors is not enough. Schools must possess the capacity to not only recognize the presence of a risk factor (or multiple risk factors) early enough, but to also track its progression and any efforts made to mitigate its impact on a student's chances of completing school. Unfortunately, the student information systems (SIS) used in many districts across the country - including Fall River and New Bedford - are mostly administrative in nature and are not designed to report on or alert administrators and teachers to potential at-risk students. In addition, these systems offer no support in measuring the effectiveness of interventions and programs on at-risk students.

Given these existing realities and complexities, school districts like those in New Bedford and Fall River need early warning systems that are able to not only identify students who are at risk using a dropout profile generated by local data; theses systems must also have the capacity to monitor, issue alerts, analyze significant and multifaceted data sets, and report on the efficacy of intervention efforts.

Business Intelligence vs. Predictive Analytics. Two approaches to the development and implementation of early warning systems emerged during the course of the Urban Initiative's research. The first model has been in existence for a longer period of time and was an outgrowth of systems and technologies used in private sector industries. Known as the "business intelligence" model, its core functions focus on analyzing historical and current data in order to provide a look at operations or conditions at a given period of time. In terms of education, business intelligence models provide a look at student performance depending upon what types of data are collected and how far back the system can provide relevant and accurate information. This data, in turn, is intended to support administrative and school-level decision-making processes relative to student achievement and intervention programs.

The second approach, although newer to the field of dropout early warning systems, has also been a common statistical tool for quite some time and is known as "predictive analytics." This approach attempts to

incorporate historical data into statistical models in order to make predictions about future events or outcomes. Predictive analytics typically includes an expanded set of data beyond internal school data, such as community-level data and data from other agencies involved with a school's student population. For the purpose of dropout early warning systems, technologies using predictive analytics usually take into account both the negative factors and behaviors that lead to dropout, such as grades and attendance, and positive factors that might keep students engaged in school, such as extracurricular activities.

Microsoft SIGMA. In its review of existing dropout early warning systems, the Urban Initiative discovered a significant effort unveiled by Microsoft in May of 2010, which capitalizes on its *Education Analytics Platform* (EAP) to provide a new data-based approach to managing students who are at-risk. Known as the Student Individualized Growth Model and Assessment (SIGMA), the goal of this undertaking is to "identify and examine the leading causes associated with students dropping out of school by utilizing data collection, data analysis, predictive analytics, and collaborative technologies, combined with the insight and support of educators, administrators, and subject-matter expects in the field of dropout prevention."[23] Working together with several key partners, Microsoft has been a part of building early warning systems that can be classified using either business intelligence or predictive analytic approaches.

According to Microsoft, while both business intelligence and predictive analytic models are valuable tools, both have their strengths and weaknesses. Nevertheless, predictive analytics provides a broader range of capabilities that go beyond simple data collection and reporting, which is common to most student information systems already in widespread use. Predictive analytic models not only incorporate the features and capacity of business intelligence models, they are also useful in providing real-time data that can help in improving "operational agility." Simply put, predictive analytics and the technologies that employ it afford organizations the ability to improve overall effectiveness by increasing the speed at which decisions are made. While corporations have been using predictive techniques to improve their operations for several years, schools can use this approach to assess longitudinal data to identify those students who have a greater chance of dropping out. According to Microsoft, the ability to identify at-risk students at such a precise level also allows local intervention specialists to promptly enroll these students

in programs that are designed to meet their needs and reduce their risk level.[24]

As a part of its SIGMA project, Microsoft is working with three software development firms that have been engaged in the design of early warning system solutions utilizing Microsoft's *Education Analytics Platform*. These three partners include Mizuni Incorporated, VERSI-FIT LLC, and Choice Solutions, and the products they offer provide "research-based data analysis techniques and collaboration tools to identify, monitor, and track students demonstrating the predictors associated with dropout or disengagement.[25]

Of the three firms working with Microsoft, it is important to note that Mizuni has been selected by the National Dropout Prevention Center to work with it to incorporate predictive analytics into the NDPC's student growth model by expanding upon the work that Mizuni has already performed in the area of software development for business intelligence early warning systems. The partnership between Mizuni and the NDPC is also guided by an effort to push Mizuni's *Data Warehouse and Dashboard Suite* toward the utilization of predictive analytics, a key part of the NDPC's newly-devised "Student Risk Assessment System" (SRAS). This particular model was selected by the Urban Initiative and its partners in the New Bedford and Fall River School Departments to serve as the early warning system component of its HSGI grant application to the DOE. (Further information on this model and its components can be found in subsequent sections of this report.)

Mizuni, Inc. According to the SIGMA report, Mizuni's *Data Warehouse and Dashboard Suite* is a "transactional and aggregation data store for managing and analyzing multiple years of longitudinal school data [and] offers education stakeholders insight into student performance by monitoring key indicators to inform instruction, increase student achievement, and improve graduation rates."[26] Specifically, Mizuni's data warehouse allows for a variety of features, including: a consolidated and centralized data store for the many applications districts often use to manage such things as student information, grades, tracking of special needs students, and transportation; analysis of multi-year student data, including demographics, schedules, grades, attendance, and discipline reports; and the ability to automate data integration from a variety of sources through a "School Interoperability Framework." In addition to this, Mizuni's dashboard suite also allows schools and districts to customize their reports to meet individual needs and to access such data over a secure web interface.[27]

Working together, Mizuni and the NDPC have created a model that overcomes the weakness of current school data systems, including those utilized in Fall River and New Bedford, in capturing all of the vital risk factors and indicators that are a necessary part of a comprehensive early warning system. To do so, this model incorporates data from other community and governmental organizations that at-risk youth often come into contact with, such as the Department of Mental Health, Department of Juvenile Justice, Department of Social Services, and local law enforcement agencies. Moreover, the development of the Mizuni-NDPC early warning system model is in line with the NDPC's long-standing philosophy that in order to understand a student's risk factors and level of risk, schools must take into account the wide variety of issues they might confront beyond the school boundaries - information and data they do not have easy access to. The combination of multi-agency data sets with predictive analytics is a revolutionary approach to the implementation of a dropout early warning system and one that holds considerable potential in efforts to not only isolate the significance of certain risk factors but to calculate the true potential of students for dropping out of school.

Choice Solutions. Developed by Choice Solutions, the *Influence Spectrum Management (ISM) and Reporting Framework* provides support for the use of predictive analysis techniques as well as student growth models. The system was developed in cooperation with the creators of the Colorado Growth Model and *edFusion*'s growth models and it provides an assessment of school effectiveness by analyzing individual student achievement and performance data over time. As such, the system devised by Choice Solutions is based upon a "student growth model," which allows schools to track student progress in meeting specified standards and benchmarks. The theory behind the model states that when schools are able to employ interventions and best practices to not only improve but amplify individual student performance, overall student outcomes are enhanced and schools are able to identify those students exhibiting risk factors that can lead to dropping out. The model allows for adjustments to be made according to local factors and conditions and offers such capabilities as role-based security that allows districts to define user access rights to student data; identification and reporting of both positive and negative factors; development, assignment, and tracking of interventions; alignment of learning strategies and interventions; and the issuance of alerts and notifications on key indicators.[28]

VERSI-FIT. Microsoft's third partner-firm, VERSI-FIT, has also developed its own early warning system based upon the *Education Analytics Platform*. Known as the *Edvantage At-Risk Early Warning System and Credit Recovery System*, this particular model is currently being produced and tested in the Chicago and Milwaukee Public Schools. The system's goals are quite similar to those of the previous two models and it offers the ability to collect and report on longitudinal data sets that integrate localized dropout prevention research in order to provide early detection of students who may not graduate from school without proper intervention. According to the SIMGA report, *Edvantage* allows teachers, counselors, and administrators to view student data based upon their security credentials and level of district-granted access. Using its longitudinal database feature, the system identifies students who are failing to meet particular benchmarks or thresholds mandated by the school system or state while generating prescriptive interventions. In addition, the credit recovery portion of the system reports on the "on-track" or "off-track" status of students based upon their performance, requirements for graduation, and measures of college readiness. *Edvantage*'s features include daily identification of high-risk students; an at-risk dashboard that highlights high-risk attendance rates; academic, behavioral, and off-track performance indicators; a student watch list report and credit recovery report; and the ability to integrate spreadsheets with Microsoft Office Excel.[29]

Pearson. Aside from the work being done by Microsoft and its affiliates, Pearson, one of the nation's leading publishers and providers of education-related materials and technologies, has also emerged as a key player in the early warning system landscape. Created by a former school administrator who was also troubled by alarmingly high rates of dropout in his district, Pearson's early warning system, called "Prevent," also seeks to give schools and districts the ability to track student data and progress as a way to reduce incidences of dropout. Pearson's model focuses on extracting a variety of relevant data points from the Student Information System (SIS) already in use by districts. In general, these indicators cover what Pearson calls the "ABC's of Dropout": attendance, behavior, and course performance. More specifically, "Prevent" collects data on attendance, retention, course failure, grade point average, behavior and discipline, test scores, and demographic data (including gender, ethnicity, race, grade level, and poverty level). The data is then sent securely to Pearson for analysis in its analytical software and this process

yields what Pearson calls its "Prevent Index," which compares student data to what research has shown to be the most significant indicators of dropping out and weighs those indicators against what research has deemed to be most predictive for each factor. Results are then imported into reports that identify those students at greatest need of intervention. In addition, the system allows for the establishment of benchmark levels so that alerts can be sent to administrators for more rapid response to declines in student growth.[30] While this system contains many of the fundamental aspects of an early warning system, its predictive model is based on what national research says is the most relevant risk factors rather than harnessing the power of localized data, which is far more effective in formulating an appropriate, accurate, and tailor-made dropout profile for predicting which students in a particular community have the highest risk for dropping out and pinpointing the reasons why.

Summary of Current State-Level Data Efforts

As already noted in previous sections of this report, the Commonwealth of Massachusetts and ESE have made great strides in the development and piloting of student information systems and a variety of data systems that have been made available to many districts across the state. In addition to its efforts around SIMS and its Early Warning Indicator Index, ESE has also created a variety of databases that contain vital information on student achievement and school-level safety and discipline data. In particular, ESE implemented its *Education Data Warehouse* (EDW) in 2007 as a mechanism for assimilating different K-12 data sets previously housed in disparate systems. According to the *Education Data Warehouse* user guide, the purpose of the system is to:

1. Place the use of robust, timely performance data at the core of educational decision-making,
2. Reduce district burden and streamline data practices,
3. Improve district data capabilities by providing resources and technical assistance, and
4. Provide data for planning, policy, and management at the state and local levels.[31]

In the long run, the EDW project hopes to provide every district and school in the Commonwealth with access to a system that can be used to quickly collect and analyze all of the organizational data maintained by ESE.

More recently, ESE received a $13 million grant from the US Department of Education (DOE) for the development of a statewide longitudinal data system that is designed to track the progress of students from pre-K through adult employment.[32] Known as "Massachusetts i-PASSPORT," an acronym for *Information Providing Accelerated Student Success from Preschool to Occupations in Real Time*, the project contains a variety of initiatives around the achievement of six goals that range from efforts to integrate data across ESE, the Department of Early Education and Care (DEEC), and Department of Higher Education (DHE) to strategies for expanding current data collection and reporting endeavors.

Of particular importance within the context of dropout early warning systems are proposals within the i-Passport project to provide all school districts in the state with access to the previously-mentioned Early Warning Indicator Index (EWI). In its grant application to the DOE, ESE recognizes the shortcomings of its current EWI and the need for ensuring that its criteria and methodology be more research-based. In addition, ESE recognized the fact that the EWI does not provide data beyond the ninth grade and that it is currently unable to provide schools with data that could lead to expanded academic opportunities for higher-achieving students. To correct these weaknesses, ESE has proposed to create "a more robust and nuanced risk and opportunity identification methodology" to be implemented by ESE and DEEC that "starts at birth and continues through high school [and] that more precisely identifies students at risk of dropping out and students who are ready for more rigorous academic course work."[33] While these reforms address the need to have data that spans a child's educational career in order for an early warning system to live up to its name, they do not address the need to develop dropout profiles for making predictions on who will drop out on the basis of local and community-specific data. Doing so will strengthen the predictive strength of the system.

The SouthCoast Pathway to Prosperity Project: A Plan for Dropout Prevention

The remainder of this report highlights and describes the plan put forth to the US Department of Education by the Urban Initiative, the New Bedford Public Schools, and the Fall River Public Schools as a part of its High School Graduation Initiative (HGSI) grant application. The process of developing this application was made possible through the collaboration formed as a result of the planning efforts already underway between both districts and the Urban Initiative.

In general, the 5-year SouthCoast Pathway to Prosperity project seeks to:

1. Increase graduation rates overall and within all subgroups,
2. Keep high school students on-track and sufficiently credited in order to graduate within four years of entering the ninth grade,
3. Retrieve students who have already left school with the aim of having them attend school regularly and persist through graduation,
4. Accelerate credit accumulation for students who are overage and/or under-credited,
5. Increase attendance rates at the eighth grade level, and
6. Increase the number of eighth graders who enroll in ninth grade the following year.

To accomplish these goals, the project proposes to implement the following activities:

1. Create a Student Risk Assessment System (dropout early warning system) in partnership with the National Dropout Prevention Center at Clemson University and their affiliate, Mizuni, Inc. with the capacity to identify students at risk of dropping out and pinpointing specific interventions for individual students or groups of students;
2. Expand mentoring programs in the middle schools that feed into local high schools (in partnership with the SMILES Mentoring program);
3. Establishment of a bridge summer program called "Jump Start" for at-risk students between the eighth and ninth grades;
4. Hiring of graduation coaches to work with at-risk high school students
5. Hiring of retrieval specialists to recover students who have left, and
6. Development of plans to establish career academies in each district's high schools.

The schools identified in the grant application as targets of the project include:

- New Bedford High School
- BMC Durfee High School
- Trinity Day Academy (New Bedford)
- Resiliency Prep. School (Fall River)
- All Middle Schools in Fall River:
  - Kuss Middle School
  - Henry Lord Middle School
  - Morton Middle School
  - Talbot Middle School
- All Middle Schools in New Bedford:
  - Keith Middle School
  - Normandin Middle School
  - Roosevelt Middle School

Major Components of the Dropout Prevention Plan

Student Risk Assessment System (SRAS)

The Student Risk Assessment System is a universal dropout early warning system that has been developed by the National Dropout Prevention Center (NDPC) and Mizuni, Inc., and would be implemented district-wide in both Fall River and New Bedford. The objectives of the SRAS are to identify those students at greatest risk and to study how dropout data break down by risk factor, which allows the school to select and target interventions to address the myriad of school-based and external risk variables that contribute to low graduation rates in each community. Understanding these risk factors, how they combine and interact to produce their effects, and – more importantly – how to intervene, is the ultimate goal of the SRAS project.

SRAS can identify students at risk of dropping out by using new data collection techniques, longitudinal data, and predictive analytics. This program is based on ecological domains of evidence-based risk factors to measure the probability or risk of individual students leaving school without graduating; this provides a data management system that:

1. Gives schools the ability to determine which students are at risk and the most appropriate interventions to reduce the risk for each student individually,
2. Gives teachers specific predictive data needed to provide appropriate instruction and support for their students,
3. Gives school leaders precise information needed to make efficient use of staff and resources in providing effective interventions and school program improvement, and
4. Delivers data needed for internal as well as external evaluation purposes.

SRAS - Stage 1: In the first four to six months of the project, the New Bedford and Fall River Public Schools and the NDPC would complete Stage I of SRAS, called

Data Discovery and Mining. This is a quantitative process which involves building a model unique to each school district and collecting relevant data based on the risk factors of dropouts. The automated system has the capacity to collect data from a wide variety of school and community sources and to use the data for that model to determine a *Risk Index Value* for each student. To build the predictive analytic risk assessment model, the NDPC would access three years of longitudinal data elements that provide locally representative historical patterns of academic and social behaviors, graduation patterns, and dropout rates in local neighborhoods, schools, and communities. Among these indicators are elements specific to attendance, academics, age, disabilities, retention, suspensions, behavior, individual and family conditions, and other social and demographic variables.

SRAS - Stage 2: In Stage II of the diagnostic process, the NDPC would collect more information using qualitative methods about the local context of the school and community. Working with the NDPC team, the New Bedford and Fall River Public Schools would share the results of recently completed stakeholder interviews and system assessments specifically designed to measure the effectiveness of dropout prevention programs and strategies in each school district. This will allow the project to investigate more deeply the issues raised by the data. The New Bedford and Fall River school districts would share the results of these reports with school staff members and stakeholders. Factors related to the community, families, juvenile justice, law enforcement, school-business partnerships, and other local issues, as well as the local resources found in our community would also be used to inform the diagnostic process.

SRAS - Stage 3: In Stage III, the New Bedford and Fall River School Departments would work with the NDPC team, the Urban Initiative (serving as project administrator), school representatives, and local community partners to analyze the quantitative and qualitative data reports and develop an action plan that incorporates all available solutions. A Steering Committee made up of school and community partners would work closely with the SRAS team and school administrators to examine the Risk Index Values for students, especially clusters of students, whether in specific cohorts, grade levels, or schools. They would examine the qualitative data to gain a fuller appreciation of local issues and needs.

School staff would review clusters of students with similar patterns of risk, grade, and school level trends to determine how best to tailor interventions for maximum effectiveness. Using the SRAS, schools would study the data and make determinations about which of the project's component interventions are appropriate for individual students or groups of students. Additionally, data would be used to analyze the need for additional interventions that can be administered as part of the systemic change sought by each of our participating school districts, either through the reallocation of existing resources or planning for future funding opportunities.

SRAS would guide data-based decision-making given its capacity to:

1. Provide information on exactly who is at risk
2. Identify the specific needs by indicating which risk factors carry the heaviest weight in that setting,
3. Make predictions that can report the degree of risk using a Risk Index that ranges from High, Medium, or Low, and
4. Provide guidance regarding both recommendations and implementation of dropout prevention intervention plans.

SRAS - Stage 4: The goal of the fourth stage of SRAS is to use the data management system as the tool for both monitoring implementation of new strategies and evaluating program effectiveness by looking at the impact on the students. Student growth in academic and/or social behaviors would be evidenced by the data over time, and this information would contribute to the information used to provide direction for individual student interventions, program effectiveness, and future planning. SRAS would also provide the infrastructure to assess the response of the project's tailored interventions and strategies for individual students, as well as the effectiveness of our educational, social, and behavioral programs. Additionally, ongoing qualitative research efforts would take place to reassess the climate of the New Bedford and Fall River schools and to help with future strategic planning in the area of dropout prevention.

Retention of At-Risk Students & Dropout Recovery

A major component of the proposed project submitted to the DOE concerns the retrieval of students who have dropped out of school, allowing the districts to re-enroll them, engage them in existing credit recovery activities, or develop alternative pathways to graduation for those who require a nontraditional approach.

Currently, large numbers of students in each district drop out simply by ceasing to show up for school. While efforts are made to contact these students and re-engage them, they often end up being signed out of school by

school administrators, a measure often taken as a result of undue pressure from state officials to meet accountability measures (such as those mandated by No Child Left Behind Act that are aimed at improving school attendance rates). To their credit, school administrators routinely extend the time students are kept in "active" status, despite existing guidelines. This is done to allow for the continued efforts of school personnel to bring these students back to active attendance and allow for progress to resume toward graduation. With limited resources, however, existing staff do not have sufficient time to devote to the process of tracking and contacting students who have left school, particularly in highly mobile urban communities where phone numbers and street addresses change rapidly.

Currently, each district has data systems in place that keep contact information on each student. Current capacity, however, only allow for the collection of that information once a year on the first day of school. Each school records students' home address, telephone number, and emergency contact information and attempts are made to update this information in the data system if a student commits to an exit interview before deciding to drop out of school. However, according to school officials more than half of students who drop out at the high school level do not do so formally or in a way that allows for an exit interview. As such, attempts to retrieve students are made extremely difficult as a result of contact information that is often outdated.

To address this serious concern, New Bedford and Fall River propose hiring graduation coaches and retrieval specialists who will significantly enhance each district's ability to maintain up-to-date contact information for students at-risk for dropping out and to retrieve those students if they leave school.

Graduation coaches would be tasked with keeping contact information for all students assigned to them and updating such information on a monthly basis. In the event that students leave school, their case would be re-assigned to a retrieval specialist who would use this information to reach out to each of these students in an attempt to bring them back to the district's schools or to encourage them to attend other programming that would put them back on the path toward graduation. In the event that contact information proves insufficient to ensure direct contact with students who have left school, retrieval specialists would visit the last known addresses of these students or conduct interviews with identified classmates and/or other neighborhood contacts of said

students to identify ways to facilitate direct contact that could lead to a return to school or to other programming.

Graduation Coaches: Graduation coaches have proven to be a successful strategy for preventing at-risk students from dropping out. The New Bedford and Fall River school districts have thus included the hiring of five graduation coaches per city as a part of their dropout prevention plan.

Graduation coaches help students develop and adhere to individualized graduation plans that keep them on track to finishing school on time. They work with teachers, administrators, parents, and social service providers to advocate for students and ensure they have the supports and services that they need to meet the goals of their graduation plans. Graduation coaches play an important role in building relationships with students who might otherwise get lost in the bustle of larger schools.

Graduation coaches have demonstrated effectiveness in a number of districts throughout the country. For example, a June 2010 study that examined the effects of a graduation coach on the attendance and test scores of at-risk students in a Georgia middle school, the author cites the success of high school graduation coaches in reducing dropout rates statewide.[34] Many other studies have also determined that students are less likely to drop out of school if they have meaningful relationships with adults within the school setting. The Fall River and New Bedford School Departments and the Urban Initiative believe that this model will be particularly effective within the context of each city's high school, where size works against the very essence of interpersonal relationships that might serve to keep students in school and on a path to graduation.

As a part of the plan for each district, five graduation coaches would be assigned to each high school; one coach in each district will specialize in working with English Language Learners (ELL) while another will specialize in working with special needs students. The coaches would work as an extension of the guidance divisions in each high school and students would be assigned to coaches having caseloads not to exceed 50 students at any one time.

Retrieval Specialists: The New Bedford and Fall River dropout prevention plan also calls for the employment of four retrieval specialists (two for each district) for the purpose of bringing back those students who have left school before graduating. Both districts currently collect

information that would allow them to contact students who leave school, but they lack the personnel to focus specifically on contacting disengaged students or tracking those students whose contact information is outdated or has changed. Students who leave school are often susceptible, within a certain time frame after leaving, to challenges and incentives that might convince them to return. They often do not return, however, because they are never contacted personally and given an opportunity to come back to school or to learn about alternatives that might suit their circumstances. The addition of retrieval specialists fits well with current efforts underway in Fall River and New Bedford to expand credit recovery options and to use those alternatives as a way to offer students who have left school the hope they need to be successful in their immediate future.

In a report prepared for the Department of Education in 2004 entitled *The Dropout Crisis: Promising Approaches in Prevention and Recovery*, Jobs for the Future stressed the need to emphasize recovery as much as prevention in order to solve the challenges associated with increasing graduation rates. In that report, they also suggested that the interventions applied to recovered students are even more important as an ingredient for success than the mere fact that they have returned.[35] By combining the research-based approaches in the proposal submitted to the DOE with successful programs currently in operation in both school districts, New Bedford, Fall River, and the Urban Initiative are confident that filling this current service gap will significantly enhance efforts to assist overage/under-credited students who leave school.

Of the four specialists to be hired, one in each district would be bilingual or multilingual in order to work with students and families representing linguistic minorities. They will work with graduation coaches to become familiar with students in advance of any potential disengagement, would be fully versed in the array of alternative programming available, work closely with school staff and agencies providing services to returning students, and would remain engaged with retrieved students as advocates and mentors to ensure a smooth transition back to educational settings.

Expansion of Middle-School Mentoring Efforts

A major component of the proposed dropout prevention plan includes a significant expansion of on-site mentoring programs for at-risk students - targeting the seven middle schools in New Bedford and Fall River that feed into each city's high schools. In doing so, Fall River and New Bedford would build off the current success of the SMILES (SouthCoast Mentoring Initiative for Learning, Education, and Service) program. SMILES began in 2003 as a partnership involving leaders from the business, faith, and education communities in New Bedford; it was established in direct response to New Bedford's longstanding high and chronic dropout rates. In 2006, SMILES was incorporated as a non-profit organization and, since that time, has been recognized as a model for other school-based mentoring programs.

Currently, SMILES matches 500 students to volunteer mentors in New Bedford and Fall River at all grade levels. Only 151 of these matches, however, are at the middle school level, where the need is potentially greatest (47 in Fall River and 104 in New Bedford). Therefore, the expansion would prove to be very significant relative to each community's efforts to expand the reach of this successful program.

As a part of the dropout prevention plan submitted to the DOE, the New Bedford and Fall River School Districts would expand the SMILES Mentoring program to an additional 450 at-risk students in grades 6, 7, and 8 at all seven of the target middle schools. The number of students to be served by this expansion is based on the number of students at those grade levels not currently being served and currently listed as scoring in the Warning/Failing category in at least one subject area of the state MCAS exam. With the implementation of the NDPC's Student Risk Assessment System (SRAS), students in subsequent years would be assigned to the program based on identification of being at-risk and the prospect of the student benefiting from the intervention.

In addition, the plan includes the implementation of standard SMILES school-based group mentoring programs as an expansion of current programming. Each group program would include 15 one-to-one matches between volunteer mentors and students. They would meet for one hour each week during the school year and each weekly session would be staffed and led by a SMILES facilitator. Program curriculum would include academic components on literacy and mathematics as a strategy for helping students who are struggling to pass the ELA and Math portions of the MCAS exam.

The plan includes the following specific elements (broken down by city and school):

- *Fall River*: 15 SMILES group mentoring programs involving a total of 225 students
  1. *Henry Lord Middle School*: 3 SMILES group mentoring programs involving a total of 45 students

2. *Kuss Middle School*: 4 SMILES group mentoring programs involving a total of 60 students
3. *Morton Middle School*: 4 SMILES group mentoring programs involving a total of 60 students
4. *Talbot Middle School*: 4 SMILES group mentoring programs involving a total of 60 students

- *New Bedford*: 15 SMILES group mentoring programs involving a total of 225 students
    1. *Keith Middle School*: 5 SMILES group mentoring programs involving a total of 75 students
    2. *Normandin Middle School*: 5 SMILES group mentoring programs involving a total of 75 students
    3. *Roosevelt Middle School*: 5 SMILES group mentoring programs involving a total of 75 students

Altogether, the expansion would include a total of 30 SMILES group mentoring programs involving 450 at-risk middle school students.

It is expected that the matches created at the middle school level will advance and endure into the high school level with the same mentors participating with their mentees in an independent mentoring program that would occur once per week through graduation and on-site at each high school.

Jump Start Summer Bridge Program

It is vital that any dropout prevention plan in Fall River and New Bedford address the all-important transition between the 8th and 9th grades, particularly for those students identified as at-risk. The goal in addressing this transition would be to increase the number and percentage of students enrolled in the eighth grade who go on to enroll in ninth grade at the start of the next school year. This strategy will help to ensure that students in danger of being retained in the eighth grade receive the academic support they need to move on to high school by not only introducing students to the high school setting, but also providing them with the additional supports that only a comprehensive summer program can provide. Through the implementation of a summer bridge program, New Bedford and Fall River can begin the process of easing the difficult transition that often ensues for at-risk students; particularly given the large size of each city's comprehensive high schools. The Urban

Initiative expects that this intervention would reduce the number of students who drop out before beginning, or immediately after beginning, the ninth grade.

A study of Chicago's Summer Transition Program in 2003 verified the positive results that can come from such programs that are established as gateways from one school level to another. The program was particularly effective at mitigating circumstances that can lead to student dropout. In fact, students who participated made gains in academic standing, increased their test scores, and bolstered their overall academic success.

As a part of its dropout prevention plan, the New Bedford and Fall River School Districts would implement a research-based summer program during the months of July and August to serve students identified by the SRAS as at-risk and having the potential to benefit from such an intervention. The summer learning experience, housed at each city's comprehensive high school, would target 8th grade students for a period of five weeks. Participants would receive support in reading/writing and math, take part in an orientation to the high school curriculum and expectations, and be afforded opportunities to develop teamwork skills and trusting relationships through community resources. When appropriate, online courses would be offered for students to earn ELA, math or US History credits toward their high school diploma. Following this approach would give many at-risk students a "jump-start" on their high school careers, so that they might begin high school ahead of, rather than behind, the rest of their classmates.

Additionally, the program would seek to improve school-family relationships by conducting home visits to emphasize school attendance and graduation from high school. To assist in these efforts the program would employ attendance officers to ensure each student's presence over the course of the program.

Establishment of Career Academies

Many students in urban settings like Fall River and New Bedford often fail to see the relevance between their high school experience and their future success in career and life. The development of career academies, as proposed in New Bedford and Fall River's HSGI grant application to the DOE, would help to restructure each city's high school and transform them into places where there is greater relevance to career and technical education, thereby yielding greater levels of motivation for students to complete school.

Both districts have attempted to organize a strategic planning process for the development of career academies and, in fact, New Bedford has initiated both a leadership academy and an engineering academy during the current school year. There is, however, a need in both communities to conduct this planning more strategically and in ways that lead to a systemic change in these high schools. Therefore, the Urban Initiative strongly believes that this is a vital part of reforming secondary education and creating a strategy for sustained dropout prevention.

Research on the impact of career academies clearly shows their effectiveness. In a study that met the research standards of the DOE's Institute of Education Sciences (IES) it was determined that career academies have a potentially positive impact on at-risk students staying in school and progressing in school.[36] These studies are especially relevant because they were conducted in urban locations similar to New Bedford and Fall River.

In order to successfully establish career academies in Fall River and New Bedford, each community must review its unique characteristics and customize a program and curriculum that will be effective for its student populations. A significant part of the planning process must be involvement on the part of the region's private sector leadership, including the Greater New Bedford Chamber of Commerce and the Fall River Area Chamber of Commerce. Inclusion of these important perspectives during the planning phase will ensure that there are ready partners to provide resources and support externship opportunities for students during the implementation phase.

Conclusion: Going Forward

In the course of conducting research for its report on the dropout crisis in the SouthCoast, the Urban Initiative noted little evidence on a regional level that early identification of at-risk students was happening in a systemic fashion. While some of the region's smaller school districts were able to achieve some success through traditional risk-identification methods such as staff observation and team collaboration, such a process is not always possible or feasible in larger schools and larger districts. As such, using effective technology and data collection tools is often necessary to ensure that potential dropouts are accurately identified and that students in jeopardy of never finishing school are guided early enough toward appropriate interventions.

At-risk students can be identified easily and effectively by using a variety of indicators like grades and test scores, attendance and tardiness records, grade retention, limited English proficiency, behavior records, and poverty status. (Typically, at-risk students exhibit more than just one of these risk factors.) But understanding what is truly driving a student's risk and any potential decision they may make to drop out of school is far more difficult. Nevertheless, pinpointing the key drivers of individual student risk is a critical prerequisite to assigning students to suitable and effective interventions.

Equally important to early identification is the tracking and monitoring of students who have been assigned to intervention programs in order to ensure that students are progressing and that the intervention is the right one to address the risk. The use of early warning systems in which student-level data is being entered regularly is the only research-based strategy to efficiently assess a school's efforts to remedy student risk while improving academic performance and the probability that students will go on to graduate with a diploma.

The Urban Initiative believes that this report and the planning process that informed it plays a key role in moving the region's two urban districts toward the goal of establishing a dropout early warning system. In addition to using this process and the data and information gathered as an opportunity to collectively produce and submit a major grant request to the US Department of Education, this work places Fall River and New Bedford ahead of the curve in relation to possible efforts to secure such a system and has enhanced district-level understanding of what the key components of an early warning system should be in order to make it most effective for their student populations.

A significant amount of interest and work is emerging at the state and national levels around data systems and early warning capacity. The Urban Initiative believes that for such efforts to be of value to school districts like Fall River and New Bedford they must be built upon the profile of local students. In addition, it is critical that coefficients of risk be constructed using local data so that risk factors can be weighed appropriately in order to increase the validity of the predictive model used. Schools and communities often wonder what actually causes students to drop out. Early warning systems that utilize longitudinal data in such ways are powerful tools in helping schools to address possible root systemic causes that underlie a district's dismal graduation rate.

The similarities between Fall River and New Bedford and their school districts, as well as their close proximity, make them natural partners in efforts to improve graduation rates. Working together in planning efforts and joint grant application opportunities with one another and with UMass Dartmouth facilitates the sharing of resources and expertise while strengthening efforts at dropout prevention. The Urban Initiative looks forward to maintaining the partnership with Fall River and New Bedford and pledges to continuously seek out new opportunities to work cooperatively in efforts that improve educational outcomes for students in both communities.

Endnotes

1. The SouthCoast region of Massachusetts includes the Cities of Fall River and New Bedford as well as the Towns of Acushnet, Dartmouth, Fairhaven, Freetown, Lakeville, Marion, Mattapoisett, Seekonk, Somerset, Swansea, Rochester, Wareham, and Westport.

2. Massachusetts Department of Elementary & Secondary Education, *Annual Dropout Rate Versus Cohort Rate*, (http://www.doe.mass.edu/infoservices/reports/gradrates/dropoutvsgrad.html).

3. Massachusetts Department of Elementary & Secondary Education, *Statistical Reports: Dropout Rate Calculations and Data Collection*, Retrieved at: http://www.doe.mass.edu/infoservices/reports/dropout/0203/defult.html?section=calc.

4. Federal Register, Volume 75, Number 117, June 18, 2010 Notices, p. 34716, http://edocket.access.gpo.gov/2010/pdf/2010-14732.pdf.

5. Massachusetts Department of Elementary and Secondary Education, *2008-2009 Early Warning Indicator Index*, February 24, 2010, p. 2-3, Retrieved at: http://www.doe.mass.edu/dropout/fy09earlyindicator.pdf.

6. The Urban Superintendents Network includes the school district from the following cities: Boston, Brockton, Cambridge, Chelsea, Chicopee, Everett, Fall River, Fitchburg, Framingham, Haverhill, Holyoke, Lawrence, Leominster, Lowell, Lynn, Malden, New Bedford, Pittsfield, Quincy, Revere, Somerville, Springfield, Taunton, and Worcester.

7. Massachusetts Department of Elementary and Secondary Education, *2008-2009 Early Warning Indicator Index*, February 24, 2010, p. 3, Retrieved at: http://www.doe.mass.edu/dropout/fy09earlyindicator.pdf.

8. Ibid, p. 3-4.

9. Ibid, p. 4.

10. Massachusetts Department of Elementary and Secondary Education, *2009-2010 Early Warning Indicator Index*, March 1, 2010, p. 1, Retrieved at: http://www.doe.mass.edu/dropout/fy10earlyindicator.pdf.

11. Ibid, p. 4.

12. Ibid, p. 2.

13. Ibid, p. 1.

14. Craig D. Jerald. *Identifying Potential Dropouts: Key Lessons for Building an Early Warning Data System*. Achieve, Inc., June 2006, p. 4. Retrieved at: http://www.achieve.org/dropouts.

15. Massachusetts Graduation and Dropout Prevention and Recovery Commission, *Making the Connection*, Massachusetts Executive Office of Education, October 2009, p. 14, Retrieved from: http://www.mass.gov/Eoedu/docs/Dropout_Commission_Report_10_21_2009.pdf.

16. Ibid, p. 15.

17. Craig D. Jerald, *Identifying Potential Dropouts: Key Lessons for Building an Early Warning Data System*. Achieve, Inc., June 2006, p. 4. Retrieved at http://www.achieve.org/dropouts.

18. Ibid, p. 4-6.

19. Ibid, p. 6.

20. Ibid.

21. Ibid.

22. Lyndsay Pinkus, *Using Early-Warning Data to Improve Graduation Rates: Closing Cracks in the Education System*, Alliance for Excellent Education, August 2008, Retrieved from http://www.all4ed.org/files/EWI.pdf.

23. Microsoft Corporation, *Student Individualized Growth Model and Assessment (SIGMA): A Microsoft Education Analytics Platform Approach to Students at Risk*, May 2010, p. 5, Retrieved at: http://download.microsoft.com/download/4/1/8/4182DF40-7EA3-4C13-91D0-E3B75D639590/Student_Individualized_Growth_Model_and_Assessment.pdf.

24. Ibid, p. 6-7.

25. Ibid, p. 7.

26. Ibid.

27. Ibid, p. 8.

28. Ibid, p. 9-10.

29. Ibid, p. 13.

30. Pearson, *Prevent: Bringing the Dropout Challenge into Focus*, 2010, p. 6-12, Retrieved at: http://www.preventdropout.com/downloads/Prevent_Overview.pdf.

31. Massachusetts Department of Elementary and Secondary Education, *Education Data Warehouse User Guide - Version 1.0*, December 2008, p. 1, Retrieved at: http://www.doe.mass.edu/infoservices/dw/chapter1.pdf.

32. Massachusetts Executive Office of Education, *Gov. Patrick Announces Massachusetts Awarded $13 Million Data Systems Grant*, May 21, 2010, Retrieved at: http://www.mass.gov/?pageID=edupressrelease&L=1&L0=Home&sid=Eoedu&b=pressrelease&f=20100521_data_systems_grant&csid=Eoedu

33. Massachusetts Department of Elementary and Secondary Education, Massachusetts Department of Early Education and Care, and Massachusetts Department of Higher Education, Massachusetts i-PASSPORT: *2009 Massachusetts State Longitudinal Data Systems Grant Application*, Submitted to the US Department of Education December 4, 2009.

34. Melissa Travillian, *The Effects of the Graduation Coach on the Attendance and Math and Reading Georgia Criterion Referenced Competency Test Scores of At-Risk Students in a North Georgia Middle School*, Dissertation presented to the School of Education at Liberty University, June 2010, p. 3, Retrieved at: http://digitalcommons.liberty.edu/cgi/viewcontent.cgi?article=1367&context=doctoral.

35. Adria Steinberg and Cheryl Almedia, *The Dropout Crisis: Promising Approaches in Prevention and Recovery*, Jobs for the Future, June 2004, Retrieved at: http://www.jff.org/sites/default/files/dropoutcrisis.pdf,

36. James J. Kemple and Jason C. Snipes, *Career Academies: Impacts on Students' Engagement and Performance in High School*, Manpower Demonstration Research Corporation, March 2000. Retrieved at: http://www.mdrc.org/publications/41/full.pdf.