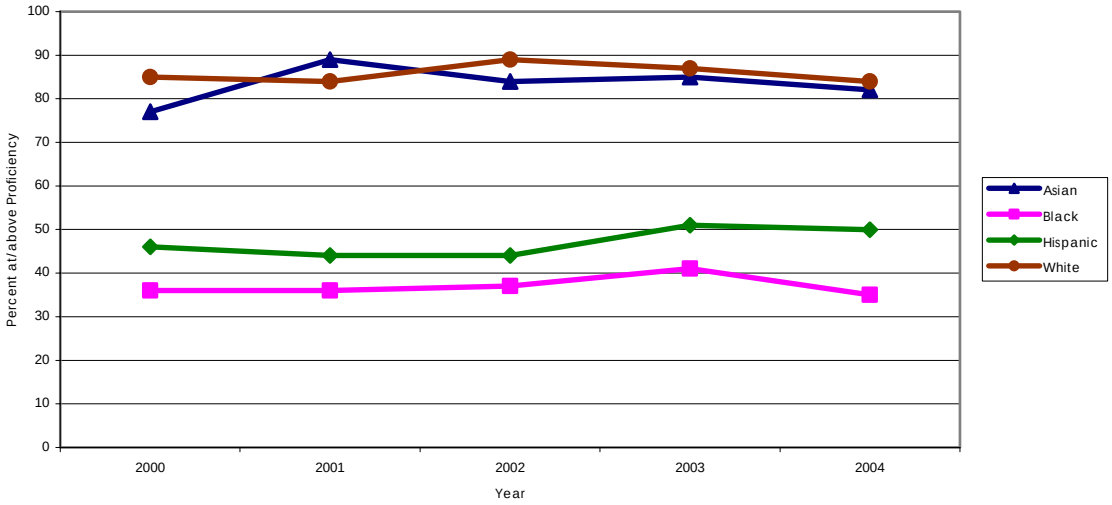
OVERVIEW OF STAMFORD PUBLIC SCHOOLS

Stamford Public Schools (SPS) is a district in transition, serving an economically and ethnically diverse student body. While overall enrollment has declined in recent years, the percentage of non-White students increased dramatically: 25% of students are Black, 26% are Hispanic and 5% are Asian. Many newcomers come from economically disadvantaged families and/or are English Language Learners and require a new level of support, which SPS struggles to provide in the face of budget constraints, lack of core curricula, no centralized professional development structure and the absence of data-based decision making capacity.

SPS is now the fifth largest urban school district in Connecticut and serves its diverse population of approximately 15,300 students in 20 schools: 12 elementary, five middle, three high schools. Yet SPS's true and rich diversity represents its biggest challenge. Achievement gaps are evident on state and local assessments, which appear in the early grades and widen as students progress through SPS. Over 40% of Black and 35% of Hispanic students in grade four scored below the proficient level in math on the 2004 Connecticut Mastery Test (CMT), versus 11% of White students.[1] *Achievement gaps between white and Asian students on the one hand and Black and Hispanic students on the other exist in all tested grades in all content areas*. In math, the CMT and Connecticut Academic Performance Test (CAPT)[2] proficiency rates among Black and Hispanic students is generally more than 20 percentage points lower than the rates for White and Asian students. Figure 1 demonstrates the magnitude of the gap in math by grade 8.

Figure 1: Grade 8 CMT Math Proficiency by Race, 2000-2004



The changing nature and scope of SPS's English Language Learner (ELL) population represents another challenge for SPS. Since 1994, SPS's ELL population increased fivefold to over 2,000 students in 2003-2004, despite declining total enrollment. Many ELLs come to SPS with a wide range of special challenges. ELLs with limited English language skills are often required to receive sheltered English instruction and take courses that are not college preparatory. SPS performance data demonstrate that ELL students lag significantly behind their White counterparts.

SPS takes great pride in the diversity of its student body and views its diversity as a genuine strength. There is, however, far less diversity among the students who graduate from SPS having performed at the highest level and who are best prepared to succeed in college. Much rests on SPS's success in serving a wide range of students and shaping college-ready students who are prepared for the 21st century.

In order to ensure 21st century college readiness among all students, SPS needs common, standards-based K-12 curricula in all subject areas. The GE College Bound District Program (GECBDP) would support the common curriculum development work in math and science that would yield common, standards-based math and science curricula for all SPS schools, performance standards for all students delineated by grade level, K-12, and, clear expectations for essential skills and knowledge and 21st century expertise.

VISION

The vision for all SPS students is to graduate from a SPS high school college ready, demonstrating proficiency in a rigorous math and science and prepared for the challenges of the 21st century. GECBDP resources will help SPS to carry out our vision for math and science curricula creation and implementation. All SPS students will graduate equipped with 21st century skills via math and science curricula that align to state standards but also include SPS performance standards reflecting skills needed for students to compete in a global economy. SPS will improve pedagogy to ensure that all students are engaged in common, rigorous, standards-based curricula, not just those students whose learning styles and experiences have made it most likely that they will achieve in school. Through the curriculum development process, SPS will identify performance standards on par with benchmarks of exceptional, 21st century math and science skills. SPS will move towards this end by creating a culture of high expectations for all learners and capitalizing on GECBDP and other resources to bring our district systems and policies up to state-of-the-art operational levels.

The SPS strategic plan will be broad and comprehensive, and the GECBDP provides the impetus for SPS to bring coherence to the strategic planning process by focusing on the needs that are most immediate: common math and science curricula to increase achievement, closing achievement gaps so that all students achieve at high levels, professional development, data systems and leveraging community support. The six design principles of the GECBDP—constituency engagement, management capacity, professional development, curriculum, GE volunteers and evaluation—are key components of building a strategic vision.

IMPROVEMENT PLANS IN THE SIX DESIGN PRINCIPLES

Constituency Engagement

The SPS Superintendent, Stamford Education Association (SEA) leadership, Stamford Administrative Union (SAU), Board of Education, community, university partners and business partners are committed to collaborative work to ensure the success of every student in our community. SPS recognizes that it will take broad and comprehensive partnerships and innovative strategies to ensure success for all students. GECBDP leaders will develop a **district-wide communications plan** to inform teachers and administrators about key activities. An **electronic communication improvement initiative** will result in more data and information about math and science reform and achievement, plus creation and distribution of college preparation materials, and will be accessible to internal stakeholders through a secure internal portal and external stakeholders through the public website. The development of **professional learning communities** at various levels throughout SPS will create time and models for use of time for teachers and leaders to collaborate together to learn, reflect, share and provide feedback. SPS will develop a **published annual professional development schedule** in math and science, including both mandated and voluntary sessions, and will be available to teachers to support both content and pedagogy improvement. SPS will **assemble a community business and university partner forum** to advise district leaders on 21st century skill preparation and connecting

curriculum to real-world environments. To share college preparation and resource materials, SPS will **create a College Clearinghouse**, which will include information for students, teachers, administrators and families about preparation for college.

Management Capacity

The SPS goals for increasing management capacity include improving service to all stakeholders at Central office and schools, identifying opportunities for management improvements and implementing strategies to enhance information technology and business processes in all areas of the SPS organization. SPS will conduct an exhaustive **assessment of technology and business processes**, including SPS management and finance systems, to revamp information and instructional technology and institutionalize data-based decision making. SPS will work to create collaborative time for teachers to review student work and serve as critical friends to improve math and science instruction. Expanding **capacity to reliably survey all stakeholders** to report on interim measures of math and science curricula implementation, stakeholder attitudes and behaviors and student engagement towards college readiness will support the GECBDP. SPS will also focus on **building leadership capacity and a district culture of high expectations for all students** using leadership development training. Throughout the tenure of the GECBDP, SPS will forge relationships with community partners to **develop sustainability in technology infrastructure** over time.

Professional Development

SPS will address the challenges identified in the June 2005 National Staff Development Council (NSDC) audit to build capacity among leaders and teachers, increase access to student data, expand (and make mandatory) interventions for lower-performing students, create time for teacher collaboration and develop district-wide curricula, consistent instructional practices, content knowledge, common assessments and professional development.[3] GECBDP leaders believe that **increasing teacher content knowledge in math and science, developing professional learning communities, institutionalizing data-based decision making, creating coaching models in all schools and developing teacher expertise in technology** are the most important initiatives to address students' needs through professional development.

Curriculum

The SPS curriculum development in math and science will create a foundation of the same high expectations for all students. Coupled with a district-wide belief that all students will be college-ready upon graduation, there are four key components of the SPS comprehensive plan to create common curricula. SPS will create **K-12 standards-based common math and science curricula,** based on state standards and infusing 21st century skills, which will generate scope and sequence charts, curriculum guides, units of study and grade-level documents to all teachers and administrators. All SPS students will receive the SPS math and science curricula, and SPS will minimize the variety of supports used in classrooms (textbooks, other resources) to support the SPS common curricula. The development and administration of **common assessments in math and science**, aligned to common curricula, will provide teachers with data on their students' achievement at key points throughout the school year. SPS will design **inquiry-based teaching methods** that encourage all students to learn as scientists in student-centered, **cutting-edge science classrooms and lab space**.

GE Leader and Volunteer Engagement

SPS, in collaboration with Dudley Williams, GE District Education Strategy Relations Manager, has identified three key initiatives to engage GE executive leadership: development of a **Net-Promoter Score program** to create a service-focused culture in Central office and schools, where staff members regard parents/families as customers; **leadership development** and training to identifying and support high-potential staff; and **improving SPS management structure and recruitment** in consultation with senior Human Resource leaders at GE Equipment Services. SPS will engage GE Volunteers through a variety of **student-centered activities** (mentoring and tutoring support, expanding College Bound District I Program efforts and engaging GE affinity groups) and **professional opportunities** (content-specific professional training and networking events).

Evaluation

SPS is committed to formative and summative evaluation of GECBDP initiatives. The vision for the SPS evaluation plan is to continuously collect data to gauge student outcomes, teacher professional development and system improvements on a regular basis to provide evidence of the expected impacts: increased college readiness and increased student achievement in math and science, exceeding state standards. SPS will develop **definitions and measures of college readiness** to ensure that all SPS students are on track to become fully college-ready upon graduations. SPS will also create **value-added or growth analysis models** to gauge interim student progress towards our goals, in tandem with analysis of non-test score indicators of student achievement. SPS evaluation strategies will also incorporate **expanded survey capacity** to assess the levels of engagement of key stakeholders and the implementation GECBDP initiatives.

Table 1 highlights the key initiatives in each of the design principles. Table 2 reflects the budget summary for GECBDP activities.

Table 1: GE College Bound District Program Initiatives in the Six Design Principles

CONSTITUENCY ENGAGEMENT	PROFESSIONAL DEVELOPMENT (PD)	GE VOLUNTEERS
• Internal communication o Joint Committee: Collaborative management of all grant-activities between administration and Stamford Education Association o Steering Committee: Sounding board, advisory o Best Practice Task Force: Over 45 teachers district-wide collaborating on best instructional practices in math and science o High School Reform Think Tank o Middle School Reform Think Tank • External communication o Community Business and University Partner Forum o College Clearinghouse • Improve electronic communication and resources	• **Teacher content knowledge** o **Content-intensive PD for all teachers in math and science** o **Voluntary credit-bearing institutes** • **Professional learning communities** o **Create common time in schedules** o **Develop models for collaboration** • **Data-based decision making** o **Create expertise in analysis of student data to plan PD & instruction** • **Coaching** o **Develop coaching models and strategies in math, inquiry-based science instruction for every school** • **Technology** o **Improve technology skills to access data and maximize instructional technology**	• Student-centered opportunities o Tutoring programs o Homework help and tutoring services o Creative thinking opportunities o Internships at a GE facility • Professional opportunities o Content-specific professional training support o Technology-based communication training o Professional networking events (speakers, forums, study groups) o Net-Promoter Score and Change Acceleration Process development o Human Capital Development services o Executive-on-Loan program
MANAGEMENT CAPACITY	**MATH AND SCIENCE COMMON CURRICULA**	**EVALUATION**
• Increase capacity in technology o Web-based instructional resources and access to information • Create time for teachers to collaborate o Learn, review data, reflect on and share math and science best practices • Increase survey capacity o Create and administer survey instruments and mechanisms and analyze student and teacher engagement and satisfaction information • Continued leadership development o Creating a culture of high expectations for all adults and students	• **Curriculum development** o **Exhaustive K-12 development of math and science curricula frameworks, performance standards & materials aligned to 21st century skills and knowledge for district-wide coherence** o **Algebra I proficiency for all students by end of grade 8** o **Inquiry-based learning in science** • **Common assessments in math and science** o **Formative, authentic assessments of student achievement toward SPS performance standards** • **Cutting-edge science materials, resources and laboratory space**	• Develop definition and measures of college readiness • Value-added analysis of student achievement or growth, new ways of measuring student performance • Increased survey capacity • Work with American Institutes for Research to assess progress towards College Bound District Program goals

Table 2: Proposed Budget

ACTIVITIES	APPROXIMATE 5-YR COST
CONSTITUENCY ENGAGEMENT	
Communications	$190,000
College Clearinghouse	$138,824
Community Partner Forum	$ 19,500
Committee Management	$868,150
Subtotal	**$1,216,474**
MANAGEMENT CAPACITY	
Technology	$660,045
Leadership Development	$120,000
Creating Time For Teacher Collaboration	$130,093
Subtotal	**$910,138**
PROFESSIONAL DEVELOPMENT	
Coaching	$2,250,035
Teacher Content Knowledge	$2,040,178
Professional Learning Communities	$ 493,152
Data-Based Decision Making	$2,569,109
Technology Professional Development	$ 410,000
Subtotal	**$7,762,474**
CURRICULUM	
Common Curriculum	$1,669,522
Common Assessments	$1,721,578
Science Resources	$ 553,000
Subtotal	**$3,944,100**
GE VOLUNTEERS	
Student-Centered Activities	$31,057
Professional Activities	$59,170
Subtotal	**$90,227**
EVALUATION	
College Readiness Measures	$ 13,000
Value-Added Measure Development	$ 62,432
Surveys	$115,000
Subtotal	**$190,432**
PROGRAM MANAGEMENT	**$1,145,026**
TOTAL	**$15,258,871**

KEY GOALS AND METRICS

Table 3 highlights select goals and metrics that will guide the development of SPS initiatives and activities.

Table 3: Key Goals and Metrics

GOALS:	METRICS:
• To improve the engagement and level of collaboration of key stakeholders • To collect key baseline data about internal and external communication processes and improve the quality of the communication • To implement strategies to improve information technology and management processes • To increase capacity to survey stakeholders quickly and efficiently • To create common time for teacher collaboration in every school	• Effectiveness of internal and external engagement strategies as measured by a qualitative survey of stakeholders • Effectiveness of communication strategies as measured by: number and quality of electronic and print communications produced and distributed; survey of visits to and use of www.stamfordpublicschools.org to access data and information • Baseline and follow-up Net-Promoter Scores on stakeholder satisfaction

GOALS:	METRICS:
• To develop leadership capacity • To increase teacher content knowledge in math and science • To create professional learning communities • To institutionalize data-based decision making • To add coaching strategies for math and science in all schools • To infuse leading-edge technology into all math and science instruction at all levels • To eliminate achievement gaps between student subgroups • To create and implement K-12 standards-based common curricula in math and science • To create and implement K-12 common, formative assessments in math and science • To map common curricula to 21st century skills • To develop and implement inquiry-based teaching and learning strategies • To add cutting-edge science materials and lab space in all schools • To engage GE Volunteers in student-centered and professional learning opportunities • To improve evaluation of student outcomes and develop new evaluation strategies to measure student growth	• Number of staff trained in Change Acceleration Process • Implementation review of strategies to improve information technology and business processes • Acquisition and use of survey technology • Amount of time used for teacher collaboration • Number of teacher participants in summer content institutes • Count of professional learning community groups and/or data teams in schools and Central office • Addition of coach services to all school staffs • Number of technology professional development opportunities offered/attended • Document, materials and implementation review of K-12 common curriculum frameworks • Administration and analysis of K-12 common assessments • Analysis of data collected through walkthrough reviews of inquiry-in-action • Classroom inventories of science lab space • Number of GE Volunteers engaged in SPS schools • Development of value-added methodology for analysis of student outcomes

TIMELINE

SPS has proposed a detailed plan for rollout of GECBDP activities. The progression of the rollout can be characterized as a development phase (Year 1), pre-implementation phase (Year 2) and full implementation phase (Years 3-5). The following activities represent the major initiatives in each of the GECBDP years.

Table 4: Timeline of SPS GECBDP Activities

YEAR 1 ACTIVITIES: 10/2006-6/2007	YEAR 2 ACTIVITIES: 7/2007-6/2008	YEAR 3 ACTIVITIES: 7/2008-6/2009	YEAR 4 ACTIVITIES: 7/2009-6/2010	YEAR 5 ACTIVITIES: 7/2010-6/2011
PROFESSIONAL DEVELOPMENT				
Development of summer institutes in math and science	Continued development of and refinements to institutes	Continued development of and refinements to institutes	Continued development and replication of institutes	Continued development and replication of institutes
Mandatory K-9 math content PD at all grade levels for teachers and administrators	Mandatory K-9 math content PD at all grade levels for teachers and administrators	Mandatory science PD at all grade levels (inquiry and/or TBD)	Mandatory science PD at all grade levels (inquiry and/or TBD)	Mandatory math/science PD (TBD)
Model development for use of collaborative time in each building	Develop and share norms for reflective practice	Additional support for professional learning time	Evaluating and refining professional learning time	Evaluating and refining professional learning time
Development of data-based decision making models and best practice	Develop and share of data-based decision making models and best practice	Develop, share, refine data-based decision making models and best practice	Develop, share, refine data-based decision making models and best practice	Develop, share, refine data-based decision making models and best practice
Develop data teams at Central, grade level in elementary and in math & science departments in middle & high	Develop data teams at Central, grade level in elementary and in math & science departments in middle & high	Continued work, expansion of data teams	Continued work, expansion of data teams (focus TBD)	Continued work, expansion of data teams (focus TBD)
Design coaching models for math and science	Continue PD on coaching strategies	Observe implementation of coaching models	Refine coaching models	Refine coaching models

YEAR 1 ACTIVITIES: 10/2006-6/2007	YEAR 2 ACTIVITIES: 7/2007-6/2008	YEAR 3 ACTIVITIES: 7/2008-6/2009	YEAR 4 ACTIVITIES: 7/2009-6/2010	YEAR 5 ACTIVITIES: 7/2010-6/2011
CURRICULUM				
K-12 development of math and science frameworks, etc.	Level 1 implementation of frameworks in all schools, grades 1, 5, 8, 9	Level 2 implementation of frameworks: grades 1, 2, 5, 6, 8, 9, 10	Level 3 implementation of frameworks: grades K-12	Year 2 of Level 3 implementation of frameworks: grades K-12
K-12 development of math and science common assessments	Level 1 implementation of common assessments: grades 1, 5, 8, 9	Level 2 implementation of common assessments: grades 1, 2, 5, 6, 8, 9, 10	Level 3 implementation of common assessments: grades K-12	Year 2 of Level 3 implementation of common assessments: grades K-12
K-12 development of math and science common assessments	K-12 development and administration of math and science common assessments	K-12 administration of math and science common assessments	K-12 administration of and refinements to math and science common assessments	K-12 administration of and refinements to math and science common assessments
Audit science space in all schools, recommend equipment & resources	Purchase equipment and resources per audit recommendations	Purchase equipment and resources per audit recommendations	Purchase equipment and resources per audit recommendations	
MANAGEMENT CAPACITY				
Audit of technology infrastructure, electronic communications, online functionality,	Implement recommendations of audit team: increase technology capacity, create access to data, best practices	Monitor implementation and modify strategies to increase technology capacity	Monitor implementation and modify strategies to increase technology capacity	Monitor implementation and modify strategies to increase technology capacity
Comprehensive audit of systems and processes	Implement recommendations of audit team	Review implementation of system and process changes	Measure effectiveness of system and process changes	Measure effectiveness of system and process changes
CONSTITUENCY ENGAGEMENT				
Develop print and online communications about math and science program changes	Continue production of print materials and online communications	Continue production of print materials and online communications	Continue production of print materials and online communications	Continue production of print materials and online communications
Develop early college awareness campaign with focus achievement in math and science	Implement College Clearinghouse	Continued revisions/updates to College Clearinghouse materials and resources	Continued revisions/updates to College Clearinghouse materials and resources	Continued revisions/updates to College Clearinghouse materials and resources
Form and launch community business and university partner forum	Continue community business and university partner forum	Continue community business and university partner forum	Continue community business and university partner forum	Continue community business and university partner forum
GE VOLUNTEERS				
Mentoring/homework support, internship and career awareness	Mentoring/homework support, internship and career awareness	Mentoring/homework support, internship and career awareness	Mentoring/homework support, internship and career awareness	Mentoring/homework support, internship and career awareness
Speaker series: education research on college readiness, math & science achievement	Speaker series: theme TBD	Speaker series: theme TBD	Speaker series: theme TBD	Speaker series: theme TBD
Executive, leadership and content knowledge training support	Executive, leadership and content knowledge training support	Executive, leadership and content knowledge training support	Executive, leadership and content knowledge training support	Executive, leadership and content knowledge training support
EVALUATION				
Develop SPS definitions and measures of college readiness	Begin data collection on SPS definitions and measures of college readiness	Continued data collection on SPS definitions and measures of college readiness	Continued data collection	Continued data collection
Create team to review value-added analysis models, alternative measures of student achievement	Early implementation of V-A analysis models and alternative measures of student achievement	Implementation of V-A analysis models and alternative measures of student achievement	Monitor implementation of value-added models	Monitor implementation of value-added models
Begin increasing SPS survey capacity	Develop survey plan, early implementation of survey strategies	Begin measurement of student/teacher engagement/ satisfaction	Refine strategies to measure student/teacher engagement/ Satisfaction	Refine strategies to measure student/teacher engagement/ satisfaction

CONCLUSION

SPS leaders believe that the proposed initiatives in the six design principles will guarantee that our students are members of a college-ready, 21st century learning community. Our professional development and curriculum goals—**strong teacher content knowledge, professional learning communities, data-based decision making, improved technology integration, standards-based common curricula and assessments in math and science for all students, cutting-edge science resources and laboratories**—will be supported through strong constituency engagement and communications, improved management processes, meaningful relationships with GE leaders and employees and comprehensive evaluation. The activities in the areas of professional development and curriculum are top priority, and SPS expects to learn from the curriculum development processes and products in College Bound and other districts.

NOTES

[1] The Connecticut Mastery Test (CMT) in mathematics, through Fall 2004, assessed student performance on a range of skills and concepts expected to be mastered by students in Grades 4, 6, and 8. The CMT Program was expanded in 2005-2006 to include testing in Grades 3, 5 and 7 and was administered in Spring, as mandated by the federal No Child Left Behind (NCLB) legislation. The skills and concepts are representative of and aligned with the content and performance standards in Connecticut's Mathematics Curriculum Framework.

[2] The Connecticut Academic Performance Test (CAPT) in mathematics and science is administered annually in Spring to students in grade 10. The skills and concepts tested through CAPT are representative of and aligned with the content and performance standards in Connecticut's Mathematics Curriculum Framework.

[3] National Staff Development Council Audit Team, *Audit of Math and Science Curriculum and Professional Development in Stamford Public Schools*, June 2005.