NATIONAL ASSOCIATION FOR
Gifted Children

Unlocking Emergent Talent:

Supporting High Achievement of Low-Income, High-Ability Students

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Executive Summary

Unlocking Emergent Talent: Supporting High Achievement of Low-Income, High-Ability Students takes a comprehensive look at achievement for low-income promising learners—past, present, and future. At its core, it challenges the nation to move beyond its near-singular focus of achieving minimum performance for all students, to identifying and developing the talent of all students who are capable of high achievement, including our promising low-income and culturally and linguistically diverse students who too often literally languish in our schools.

The foundation for this report was built at the National Summit on Low-Income, High-Ability Learners, convened by the National Association for Gifted Children in 2012. The Summit gathered experts to share the latest research on the education and development of low-income, high-ability students, identify barriers to achievement in school and success in adulthood, share information about successful school-based and supplemental programs, and recommend areas in need of further research. After presentations and discussion, participants made recommendations for practice, policy, and research that are based on three general assumptions:

- Poverty and minority status are not the same. Although there is overlap, poverty manifests differently based on geography, ethnicity, and race.
- Poverty is pervasive and includes students from rural, White, urban, African American, Hispanic, Asian, and other cultural backgrounds.
- Typical characteristics of gifted students may manifest differently in low-income, high-ability learners.

Call for Action

Unlocking Emergent Talent sets the stage for major strides in both understanding and action, by spotlighting strong evidence-based program models that produce performance results for low-income, high-ability learners, recommending educational best practices, and identifying both research and public policy gaps that, if filled, could achieve significant results for the future. The report calls on educators and policy makers to:

- Expect more than proficiency from many more students through policies, funding, and practices that consistently support high expectations and high achievement.
- Provide multiple strategies to support student achievement at the highest levels, and expand access to rigorous curriculum and supplemental services and programs.
- Expand preservice and in-service teacher training on identifying and serving high-ability, low-income and culturally and linguistically diverse students.
- Support emergent talent as early as possible, establishing a commitment to achievement at an early age.
- Engage communities to support in-school learning and supplement curriculum with outside-of-school opportunities
- Minimize a student's zip code and socioeconomic status as the determining factors for receiving a rigorous, high quality education.
- Identify successful program models and interventions that work with low-income, high-ability students from different geographical, cultural, and racial backgrounds.
- Remove policy barriers that impede participation and access.

Barriers to Excellence

The impetus for the National Summit and *Unlocking Emergent Talent* is the lack of attention to the troubling data about student achievement. While our nation continues to express commitment to closing the achievement gap, the proportion of low-income stu-

dents performing at advanced levels on the National Assessment of Educational Progress exams remains shamefully low. For example,

- Between 1998 and 2007, 1.7% or fewer of free and reduced lunch program-eligible students scored at the advanced level on the eighth-grade math exam compared to between 6% and 10% of non-eligible students.
- Since 1998, 1% or fewer of 4th-, 8th-, and 12th-grade free or reduced lunch students, compared to between 5% and 6% of non-eligible students scored at the advanced level on the civics exam.

In addition, factors present in school today do little or nothing to improve or sustain top student performance. Equally troubling is that once out of secondary school, high-achieving, low-income students are less likely to attend selective colleges or even graduate from college at all.

Unlocking Emergent Talent identifies numerous factors that impede participation in advanced programs by low-income, high-ability students. Too often these children, who typically depend solely on public schools to meet their educational needs, are overlooked by educators and administrators who see high performance on ability or achievement tests as the sole indication of high ability. The type and variety of obstacles are wide ranging, and include policies, perceptions, and pedagogy and curriculum.

Identifying Best Practices

Drawing on lessons from successful school-based and supplemental program and service models featured at the Summit, *Unlocking Emergent Talent* highlights their common factors such as expanded learning time, augmented student support networks, and enriched curriculum, and makes best practice recommendations in identification practices, programs and services, and supportive school cultures. The authors are quick to point out that a list of best educational practices must be coupled with a perspective about students and learning that emphasizes strengths instead of weaknesses, differences rather than deficits, possibilities as opposed to limitations, and solutions instead of obstacles. Finally, to provide a comprehensive approach to working with low-income, high-ability students, the report addresses the important role of psychosocial skills needed for success. The report draws on a wide range of research to make its observations about mindset, stereotype threat, motivation, and other non-cognitive factors, which in addition to intelligence and ability, are essential to high achievement.

Identifying A Research Agenda for the Future

The research agenda focuses on three primary areas related to improving practice with low-income, promising learners: the nature and development of psychosocial characteristics; barriers to participation in programs for gifted students; and characteristics of instructional strategies and programming found to be successful with this special population. The report emphasizes the need to prioritize those programs and services that can by scaled up and expanded in economical ways in order to increase their availability and impact. The authors observe that there is much to be learned about students who are currently disenfranchised from the best the nation's education system has to offer and recommends a full slate of topics and questions in need of further investigation.

Changing the Future

The case made within the pages of *Unlocking Emergent Talent* gives researchers, educators, practitioners, and policy makers reasons to be optimistic about the future we can – and must – create for low-income, high-ability learners, as well as a roadmap for success. As we strive to develop services and programs, the goals for these learners remain the same as those for other high-ability students: the development of a psychological identity that supports high achievement; increased access to challenging curricula, rigorous educational programs, and selective institutions of higher education; access to out-of-school supplemental programs; and community and family support. Turning the untapped potential of low-income, high-ability learners into tremendous achievement challenges all educators, policy makers, and our society at large to take action. The very future of our nation depends on it.

Introduction

As part of its mission to support all gifted and talented students, the National Association for Gifted Children (NAGC) convened a group of scholars, practitioners, and policy experts in Washington, DC, to discuss an undeniable failure of our educational system—the development of the talents and abilities of low-income,[1] high-ability learners. The stakes are high. In 2011, 21% of children between the ages of 5 and 17 lived in poverty, an increase of 4.3% since 2007[2], leaving even greater numbers of children without an appropriately challenging education. The National Summit on Low-Income, High-Ability Learners, held in May 2012, was made possible by a grant from the Jack Kent Cooke Foundation.

United by a common concern and purpose, the goals of the Summit were:

- to share the latest research on the education and development of low-income, high-ability students;
- to identify barriers that prohibit these students from reaching the highest levels of achievement in school and success in adulthood commensurate with their abilities;
- to share information about school-based, supplemental programs that are achieving success with low-income, high-ability students;
- to compile best practices for identifying and serving low-income children from all sectors of our society especially culturally and linguistically diverse students; and
- to craft a research agenda to inform future practice with these students.

In 2007, NAGC assembled a group to consider the underrepresentation of this student population in gifted and talented programs, which resulted in a groundbreaking report, *Overlooked Gems: A National Perspective on Low-Income Promising Learners*.[3] The Summit and this paper, *Unlocking Emergent Talent: Supporting High Achievement of Low-Income, High-Ability Students*, build on that previous work. We present a summary of the major issues that affect the talent development of low-income, high-ability learners as well as some programming and practice suggestions. Appendix A includes a brief summary of the eight programs designed for these students that were highlighted at the Summit. Also included is a list of recommended best practices and research questions deemed critical by conference attendees to improving the educational and life outcomes for these students.

NAGC will distribute *Unlocking Emergent Talent* broadly to other education organizations, teacher trainers, and policy groups as well as to NAGC members, state and local gifted education advocacy organizations, and others working with low-income students. The fact that too many of our most talented students are not receiving the services they need to turn their untapped potential into tremendous achievement is not just a problem for gifted educators, but challenges all educators, policy makers, and our society at large to take action in to reverse this failing.

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Top-Achieving Students in the United States Today: An Overview

The United States educational system does not compare favorably to other countries in terms of producing students who demonstrate very high levels of academic achievement. Although many students in the U.S. do well in advanced K–12 coursework and go on to succeed in graduate programs and beyond, a closer look at national and international data show that only small percentages of children in the U.S. reach the highest levels of achievement on national and international tests. Additionally, schooling does little to increase the progress of high-achieving students and may not even support students to maintain high achievement. For minority and low-income students, the situation is acute; a dearth of these students reach advanced achievement levels, resulting in large "excellence" gaps at the top end of the achievement spectrum.

Few U.S. Students Reaching Excellence

The proportion of students who score at the advanced level on the National Assessment of Educational Progress (NAEP) exams, known as the nation's report card, has increased in some areas over the last decade, but in 2011, was still below 8% in each of the major subject areas of math, science and reading, and at only 2% for eighth graders in science and 3% for eighth graders in writing.[4]

Data from the 2009 Programme for International Student Assessment (PISA) shows that the U.S., in comparison with countries such as New Zealand, Shanghai-China, Canada, Singapore, Finland, and Japan, produces smaller percentages of students who reach the highest achievement levels in reading (1.5% compared to between 1.8% and 2.9%), math (2% vs. 3% to 27%), and science (1% vs. 3% to 4.6%).[5] These results are especially alarming given concerns about how to prepare students to become the innovators and creative producers of the future needed to meet our country's economic, technological, and security needs.[6]

Impact of Poverty on Educational Achievement

Economic disparities between groups of individuals, even within generally affluent societies and countries, compromise educational opportunities and outcomes. Using multi-nation mathematics data from the 2006 PISA study, Dennis Condron[7] found that countries with a more even distribution of economic resources among its citizens have higher average levels of achievement and, importantly, produce higher percentages of very highly skilled students and lower percentages of very low-skilled students compared to countries with larger income disparities. The United States, with a high income disparity, has a very low percentage of high-scoring students and has one of the highest percentages of low-scoring students compared to other relatively affluent countries.[8] Two students from different socioeconomic levels vary much more in their educational outcomes in the U.S. than in other PISA countries, which is especially sobering if poverty rates in the U.S. continue to grow.[9]

Achievement and Excellence Gaps

The term achievement gap typically has been used to refer to disparities between subgroups of students reaching minimal levels of achievement compared to their White counterparts. Research indicates that these gaps exist at every level of achievement, including the very top levels.[10] African Americans, Latinos, Native Americans, and English Language Learners (ELL) are severely underrepresented among the top 1%, 5%, and 10% of students at all levels of the educational system from kindergarten through graduate and professional school.[11] A major reason for these achievement gaps is that many more African American (38%), Hispanic (32%), and American Indian (33%) children live in low socioeconomic circumstances compared to Asian (14%) and White children (17%), and at proportions well above the national average of 22%.[12] However, White students make up

the majority (57%) of rural children in poverty.[13] Sixty percent of the five million ELL students in the U.S. qualify for the free and reduced lunch program.[14]

Vast excellence gaps for low-income students. Extremely few students who qualify for the reduced lunch program and even fewer of those who qualify for free lunch are among top scorers on the National Assessment of Educational Progress (NAEP) exams. And although our national attention continues to focus on closing the gaps in learning at the lower end of the achievement spectrum, the proportion of low-income students performing at the advanced level is shamefully low and has remained stagnant or grown only slightly in the last decade:

- Between 1998 and 2007, 1.7% or fewer of free and reduced lunch program-eligible students scored at the advanced level on the eighth-grade NAEP math exam compared to between 6% and 10% of non-eligible students.[15]
- Since 1998, 1% or fewer of 4th-, 8th-, and 12th-grade free or reduced lunch students, compared to between 5% and 6% of non-eligible students scored at the advanced level on the NAEP civics exam.[16]
- Since 1998, 1% or fewer of free and reduced lunch program-eligible students scored at the advanced level on the eighth-grade NAEP writing exam while the percentage of non-eligible students who achieved advanced scores increased from 1% to 3%.[17]

Current schooling does not improve or sustain top student performance. Xiang, Dhalin, Cronin, Theaker, and Durant[18] tracked the performance from elementary to middle school and from middle school to high school of students who scored at the 90th percentile or above in the initial year of the study on reading or math subtests of the Measure of Academic Progress test. The study found that the students' academic growth was slower than low and middle achievers in reading and at similar rates in math. An analysis of NAEP data aimed at assessing the impact of accountability systems like the No Child Left Behind Act[19] yielded similar results. Between 2000 and 2007, the lowest achieving students (lowest 10%) in the nation made rapid gains in reading and math while the performance of the top students (highest 10%) was stagnant.[20] The 2011 NAEP results for science indicated scores were higher for all students except for the highest achievers (i.e., those who score at the 90th percentile or higher).[21]

Research has also found that not only are there scant, if any, achievement gains for top students over time, but also in many cases, top achievers actually lose ground as they progress through school. Xiang et al.[22] reported that 30% to 48% of students scoring in the top 10% on reading or math tests descend out of the top decile as they continue through years of school. For low-income students, Wyner, Bridgeland, and Diiulio[23] found that only 56% of first graders remained in the top achievement quartile by the fifth grade, compared to 69% of higher income children.

Current schooling does little to close gaps in higher education graduation rates. At most levels of the educational system, high-achieving minority students do not perform at comparable levels to high-achieving White and Asian students.[24] These academic disparities persist through and after high school. Wyner et al.[25] found that although high achieving, low-income students tend to graduate from high school on time, they are more likely to attend less selective colleges than their more advantaged peers (21% vs. 14%), are less likely to graduate from college (49% vs. 77%), and are less likely to receive a graduate degree (29% vs. 47%).

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High-Ability Students Not an Education Priority

The nation's focus on reforming our educational enterprise over the last decade has been on raising the achievement of the lowest performing students and closing achievement gaps between subgroups of students—all aimed at basic levels of performance. The No Child Left Behind Act (NCLB)[26] and other federally funded initiatives, such as the U.S. Department of Education's Race to the Top grants, have been driving this reform. While improving all students' performance is a critically important goal, there is now evidence that this basic-level focus does little to advance the growth and achievement of higher achieving students. That is, success in closing achievement gaps among lower achieving students does not appear to impact gaps among groups of top students, which continued to grow during the NCLB era.[27] There is even some suggestion that the focus on minimum levels of competency and raising the lowest achieving students may indirectly negatively affect the growth of higher achieving students because the most important educational resource—a teacher's time and attention—has been singularly focused on struggling students. Loveless, Farkas, and Dufett[28] found that teachers perceived that low-achieving students received significantly more of their attention and are their schools' top priority, while still endorsing the view that all students in their classrooms, including the high achievers, deserve an equal share of their attention.

Lack of access to rigorous curriculum. Our nation's efforts to increase equity in our schools often do not include low-income or minority students who are already showing advanced ability and/or achievement. The U.S. Office for Civil Rights[29] reports that approximately 55% of high schools offer calculus, yet only 29% of high schools with the highest enrollments of African American and Hispanic students offer the same course; the percentages for physics are similar (66% vs. 40%). The percentages for Algebra II are not as disparate (82% vs. 65%), but together reveal a pattern of unequal access to courses needed for selective colleges and careers. And, too often, efforts to increase access do not go far enough. For example, a recent report from the College Board[30] shows that although more low-income and underrepresented minority students are taking Advanced Placement (AP) classes in high school, they are not earning passing scores on the AP exams at commensurately higher levels. It is important for all stakeholders to realize that increased access alone does not ensure greater competency or preparedness for future learning.

Tenuous commitment to gifted education programs. The U.S. has no federal law mandating the education of gifted children. Whether and how these students receive services in their local schools is dependent on state law and local policies and practices. There is wide variability across states on the presence of laws and policies regarding student identification, provision of gifted program services, teacher training, and other areas crucial to ensuring high quality gifted education. Numerous states leave virtually all decisions about serving gifted students to local districts, compounding the variability.[31]

It cannot be ignored or discounted that whether gifted children's abilities are noticed and developed depends largely on where they live. Families who move from one state to another, one district to another, or even one school to another within a district cannot be assured that their gifted children will be eligible for, or receive the same, if any, services as before. In addition, state-level funding for gifted and talented programs is on the decline, which, coupled with small local school budgets, puts more gifted education services at risk. In 2010–2011, only four states fully funded state mandates for gifted services, and between 2009 and 2011, 14 states decreased state funding for gifted education programs and services.[32] At the same time the field lost its only dedicated federal funds, which had been distributed for more than 20 years through the Jacob K. Javits Gifted and Talented Students Education Act[33] to support research focused on underserved and underidentified gifted learners, including low-income, high-ability children.

Collectively, large income disparities in our country that put more poor children at risk for optimal development, a national singular focus on minimal levels of achievement, and reduced investment in gifted education at the state and federal level, in combination with an increased demand for high-level skills, makes it even more important to focus our attention on low-income, high-ability learners. It is imperative that we develop program models, best practices, and policies that will support these students. Our nation's success depends on our ability to develop the talents of high-ability students in every community.

Barriers to Participation
in Advanced Programs for Low-Income, High-Ability Students

As Summit attendees discussed the key issues in developing and promoting services for low-income, high-ability students, a number of barriers to success emerged. Barriers center on issues related to identifying the often overlooked talents of these students and features of programs that may inhibit qualified students from participating. These barriers are particularly detrimental for children who depend solely on the public schools to meet their educational needs.

A Conception of Giftedness That Emphasizes Only Already-Developed Ability

Too often, giftedness is viewed exclusively as a trait that is manifested in high performance on ability tests, and as something that is inborn, fixed, and unchangeable.[34] This conception persists in spite of the fact that the majority of states include *potential to achieve* in their definitions of giftedness.[35]

A high-performance view of giftedness sees the formal identification of gifted children through testing as the first step, followed by the development of ability and talents through school-based and outside-of-school programs. This process often fails to identify children who are less likely to live in a literacy-rich home and community where reading, writing, and language are understood to be critical for academic success. In many cases, otherwise capable children may not be able to demonstrate their advanced learning potential on tests or other performance assessments until after they have access to challenging curriculum and enriched learning opportunities.

Misconceptions About Low-Income, Promising Learners

Summit participants agreed that one of the most significant barriers to the identification of low-income, high-ability learners and the development of their abilities and talents is inaccurate perceptions held by teachers and school administrators about the capabilities of these students and the strengths of their families. Inequalities in teacher nomination for gifted programs and a lack of use of performance assessments and other qualitative data may be the most significant reasons why culturally and linguistically diverse students and low-income children are underrepresented in gifted programs.[36] Ford[37] contends that "deficit thinking" is the root of the problem. It involves viewing individuals or members of a different group as inferior because of their culture or language. It is a viewpoint that focuses on what students do not have instead of the strengths they bring to school and learning. Such thinking results in misinterpreting a lack of economic, social, and cultural capital as a lack of interest in school and/or motivation to achieve. Deficit thinking manifests itself in a lack of acknowledgement of cultural preferences for learning and in the varied expressions of knowledge and giftedness, low expectations for the achievement of culturally and linguistically diverse students, and a scarcity of identification practices and program models that capitalize and build on students' unique cultural experiences and strengths.[38]

Pedagogy and Curriculum That Fails to Support Talent Development

The association between poverty and children's academic performance begins as early as age 2 and unaddressed deficits in readiness for school upon entry into kindergarten can determine a child's path for success for the rest of his or her life.[39]

Most gifted children receive all of their instruction within heterogeneous classrooms from teachers with little or no formal training in gifted education.[40] Our most vulnerable children are in classrooms with teachers who do not know how to spot talent or organize curriculum or

instruction to nurture or develop it. Because of this lack of training, teachers underestimate the capabilities of gifted children and thus, just how advanced curricula must be to engage children, elicit high achievement, and further develop their abilities.[41] Often, the response to perceived academic deficits in children is to focus instruction on methods of direct teaching, using drill to build up missing basic skills and content knowledge. However, bright children who enter school behind or with some academic weaknesses still can learn at a faster rate and with less repetition than typically developing children. Instruction that proceeds slowly with small increments of knowledge will neither engage nor motivate these students, nor will it allow their advanced problem solving and reasoning abilities to become obvious to teachers.

Cultural diversity and differences undervalued. As the population of the United States becomes more diverse[42] and more socioeconomically divided, our schools and classrooms must respond to that diversity by offering students a truly multicultural education. Ford[43] states that a multicultural education includes giving students culturally responsive curriculum and instruction in all subject areas, recruiting and retaining a more racially and culturally diverse teaching force, and ensuring that multicultural education is integrally related to the educational process rather than merely an add-on or only superficially related. When students feel that their experiences, cultural heritage, language, and values are recognized, appreciated, and reflected in the curriculum and instruction they receive at school, they are more likely to demonstrate the necessary motivation, effort, and attitude needed to become high achievers. This curricular relevance applies not only to minority groups, but also to majority cultures living in geographically depressed areas where the norms and beliefs of a geographic area are not necessarily valued in school, and vice versa.

School Identification Policies

Summit participants noted that school practices regarding identification of students for services can act as barriers to the participation of low-income, high-ability learners and culturally and linguistically diverse students in gifted programs. Suspect practices can include:

- identification processes that do not use multiple and varied types of assessments (e.g., tests and portfolios) and thus fail to gain a holistic picture of students;
- selection criteria that do not evaluate students' ability or potential in light of their previous opportunities to learn (i.e., use national norms rather than norms based on a local population more similar to the students being evaluated);
- reliance on nominations or evaluations from teachers with little or no training in gifted education and/or advanced subject-matter knowledge, multicultural education, or experience teaching culturally and linguistically diverse students; and
- identification practices that give students "one shot" at entrance into a gifted program; and identification processes that are static and look only at performance at a single point in time rather than for patterns of significant growth or "upward trajectories" over time.[44]

Compounding the above, other aspects of identification practices may inadvertently suppress the participation of low-income and culturally and linguistically different students in gifted programs. For example, asking parents to nominate their children for a program or to attend meetings in order for their child to participate, or not having materials about the program available to parents in their native language can serve as disincentives and barriers for these students. Schools need to reevaluate and re-craft their identification systems to ensure that they are responsive to and appropriate for all gifted learners.

Gifted Program Policies That Hinder Participation and Performance

Summit participants discussed some gifted program policies that can be impediments for diverse and low-income gifted learners. For example, district-wide gifted programs that require students to leave their neighborhood school in order to attend a magnet school or special program may be a barrier for students whose cultures value close ties to and investment in their immediate community. Other issues, such as long bus rides or inability to afford or provide transportation to schools across town, also prevent participation.

The general lack of school or district policies regarding the use of all forms of acceleration (e.g., grade or subject skipping, early entrance to kindergarten) or policies that prohibit credit for outside-of-school courses and programs are barriers to learning gains for all gifted

students; however, they can be especially detrimental to the talent development of students whose families do not have the access, specific knowledge needed, or confidence to advocate aggressively for these options for their children nor the means to seek alternative school choices to obtain them.

Labeling Students as "Gifted"

The "gifted" label carries many connotations that are not welcomed in the same way by all students and their families. For many students, being identified as gifted affirms student abilities, achievements, and hard work to others, including teachers and family members. But, according to Summit participants, the label may also set one apart from peers resulting in unintended negative consequences such as isolation and bullying.

If qualifying for the gifted program engenders fear of rejection by peers,[45] students will resist the label and the opportunities that come along with it. If students worry that participation in high-stakes testing and academic achievement situations will confirm negative stereotypes about the achievement of their racial, cultural, or gender group,[46] they may choose not to be involved. If students know that participating in advanced and accelerated classes means that they will be one of only a few minority students within the class, they may opt out of these opportunities.[47] Educators and parents must be aware of the potentially negative ramifications of labeling students as gifted and address this problem from many fronts including changing the culture of a school regarding how high academic achievement is recognized and rewarded, educating families about the benefits of gifted programming, and helping students acquire effective strategies to cope with potential negative reactions from peers. In addition to anti-bullying programs, such support can include counseling, group talks, bibliotherapy, as well as mentors and role models.

Lack of Access to Supplemental Programming

Research documents that a rich "dose" of educational programming, both within and outside of school, is associated with higher levels of achievement in STEM fields, including creative products like patents and publications. Many of the students in the Wai et al.[48] study participated in talent search programs that involved outside-of-school, supplemental courses and summer and weekend programs. Parents have often turned to outside-of-school programs for gifted children because of the shortage, or absence, of advanced courses in their children's schools. Increasingly, these programs are viewed as having an important and unique role in the talent development of gifted children. They provide challenging coursework that goes beyond the school curriculum, unique academic experiences such as opportunities to work in research labs or do field work, extended contact with intellectual peers, and early opportunities to preview college life or the world of work[49]—experiences many schools do not provide. As a result, there is an extensive network of outside-of-school providers, consisting largely of colleges and universities. However, most of these opportunities, which include weekend classes, summer programs, study-abroad programs, and distance education programs, are tuition-based and thus are out of the reach of low-income families. Low-income students who have jobs, care for younger siblings, or have other family responsibilities may not be able to partake of these opportunities even if sufficient financial aid is available. Others shy away because they do not know to ask for financial aid. If these outside-of-school programs are considered vital to the talent development of gifted students and especially important to both compensate for what is lacking in their school-based programs and inoculate them against negative school environments, we must find a way for more low-income, high-ability students to take advantage of them.

The "gifted" label carries many connotations that are not welcomed in the same way by all students and their families.

Barriers to the identification of low-income, high-ability learners and their participation in gifted programs exist and are challenging. However, they are not insurmountable. Removing these barriers will take training and education for educators, changes in identification methods and program designs, and a strong commitment to fostering the talents of all gifted students.

Successful Program
Models and Practices With Low-Income, High-Ability Students

Summit participants shared a variety of successful programs aimed at low-income, high-ability children. Some of the programs were located in schools and school districts; others were sponsored by non-school organizations and provided programming to supplement school programs (see Appendix A for program descriptions). "Success" for these programs was variously defined, but generally involved enabling more low-income and culturally and linguistically diverse students to increase their academic achievement and succeed at each level of schooling. Many of these services and opportunities were made possible through the collaborations between universities and local school districts (e.g., Project EXCITE, Project NEXUS), between several universities (Next Generation Venture Fund [NGVF]), and between universities and other not-for-profit organizations (e.g., NGVF, Project NEXUS, TEAK Fellowship, Sponsors for Educational Opportunity [SEO]). While the programs differed widely in size, features, costs, sponsorship, and goals, there were also some clear commonalities. Collectively they offer strategies to put more students of all ages on a path of talent development and high achievement. We extract from these various programs some recommended best practices.

Gateway Programs

Each of the programs featured at the Summit targets a specific segment of the K–12 pipeline with goals aimed at preparing students for subsequent advanced programs and courses. Some reach students at the beginning of their schooling, setting them on the right path very early. Other programs were created to help students sustain high achievement through critical transitions to higher levels of schooling such as entry into middle school or high school. Research shows that many students flounder at these transition points because of increased academic demands coupled with decreased support from teachers.[50] Even students who have success in school may not be equipped with the skills and support to successfully overcome obstacles at key transitions in their schooling and may need extra support.

Specific program goals include: students completing algebra and geometry in middle school so they can qualify for accelerated math and science classes in high school; helping students succeed in Advanced Placement (AP) courses and on AP exams and raising SAT scores to qualify for more selective colleges and universities; increasing the number of students in the Middle Years International Baccalaureate (IB) Program to create a pathway into the IB high school program; and working intensively with students in early elementary school so they qualify to enter gifted and advanced academic programs beginning in grade 3. Collectively, the programs increase access, create additional entry points into, and address "leaks" in existing pipelines of talent development for low-income, promising learners.

Program Selection Criteria Matched to Level of Developed Talent

In general, of the programs that were highlighted at the Summit, those that began earlier in a child's life are appropriately less selective or cast a wider net than programs that intervened at later points. Programs that start early in K–12 tend to be more open with fewer qualifying criteria for students, while programs that start later generally have more specific criteria related to the goals and requirements of the program. For example, the Young Scholars program works with students in kindergarten through grade 3 and provides challenging curricula to prepare them for entry into district-level gifted programs. Teachers look carefully at all students for evidence of advanced thinking and exceptional problem solving. Students who enter Project EXCITE in grade 3 qualify by scoring in the top quartile on standardized tests and receive 6 years of supplemental programming aimed at preparing them for even more selective honors-level courses and accelerated STEM programs

in high school. The Middle Years program featured at the Summit is open to all students because it aims to prepare as many middle school students as possible for entrance into the selective IB high school program.

Programs such as the TEAK Fellowship and SEO, which begin between grades 6 and 9, look for evidence of higher academic achievement but especially high motivation for and commitment to the substantial number of outside of school hours required in these programs. All of the programs that had selection criteria employed multiple measures and did not subscribe to particular cutoff scores. They used data, based on local norms, to gain a holistic assessment of a child that was then used as a basis for selection. The emphasis was on identifying "climbers"—students who demonstrated interest and commitment to academic achievement.

High-Powered Curriculum

It is not atypical for teachers to assume that students who come from low-income families or homes in which English is not spoken would not be ready for an advanced, challenging curriculum that emphasizes and requires higher-level thinking. However, recent research indicates that providing a high powered, enriched curriculum and scaffolding for advanced thinking and questioning skills—a gifted curriculum—rather than remediation and direct teaching, was successful in raising the academic achievement of learners of varying ability and socioeconomic levels.[51] In other words, a curriculum typically reserved for only the highest achieving students also can be used with students with emerging and developing talents and abilities.

There was evidence of this approach in multiple programs. The Young Scholars Program works with teachers to provide challenging lessons to all students in all classrooms and monitor for responses indicative of exceptional thinking and problem-solving ability. The Project M^2 and M^3 curricula have elementary school students assume the role of mathematicians and solve real problems, conduct investigations, and create projects. Project EXCITE and NGVF involve students in accelerated summer and distance learning programs designed specifically for academically gifted students. Project NEXUS and the Middle Years IB Program provide students advanced content so as to prepare them to enter AP and IB classes. Challenging courses and content-rich enrichment are used to nurture talent early, identify emerging talent, and build up basic skills, rather than remediation.

School-based programs such as the Middle Years IB Program, Project NEXUS, Young Scholars, and Projects M^2 and M^3 spend considerable time on teacher training and professional development and/or create teacher teams to ensure vertical alignment between preparatory programs and subsequent advanced courses (e.g., Pre-AP and AP classes, Middle Years Program IB curriculum, and the IB curriculum). In Projects M^2 and M^3, training also includes providing a rich mathematics background to help elementary teachers understand the conceptual development of the mathematics and the additional challenges provided by the advanced and in-depth content of the curriculum.

A critical outcome of these professional development efforts was changing the attitudes and expectations of teachers away from a deficit perspective and giving them the skills to differentiate curriculum so as to provide advanced and enriched content to capable students. Teachers learn that advanced curriculum and high expectations are the keys to deep engagement that resulted in the demonstration of higher-level thinking and achievement.

Significantly Expanded Learning Time

A key feature of most of the programs presented at the Summit is extended learning time through classes or other academic opportunities outside of the school day. SEO adds the equivalent of 720 addition hours via classes after school, on the weekends, and during school breaks and the summer. Project EXCITE consists of 400 additional hours of supplemental programming for students in after-school, Saturday, and summer classes over a 6-year period. The Young Scholars Program and TEAK Fellowship expand learning time through summer programming while NGVF uses summer programs and online classes. Increased learning time is used to provide leadership development, enrichment, internships, college counseling, SAT and ACT test preparation, training in entrepreneurship, and additional practices in academic success skills.

Expanded learning time has been a key component of school reform efforts for low-income, low-performing students,[52] particularly summer programming to stem

academic skill loss.[53] Although not traditionally used for higher achieving and higher-ability students, extended learning opportunities may be equally as important for promising students who are not achieving at levels commensurate with their potential and ability or gifted students who need some additional "catch up" time to qualify for advanced programs.

Providing Program Components That Equalize Opportunities

Outside of school, supplemental programs featured at the Summit are multifaceted and include both additional classes aimed at buttressing important skills or providing high-level enrichment as well as services that more advantaged families can purchase or obtain readily on their own and within their communities. For example, many families employ private tutors to ensure that their child does well in difficult courses. Additionally, given the high college counselor-to-student ratio in high schools across the U.S. (estimated as 457 to 154), many families also hire private college counselors to help their children successfully navigate the college application process and assist in finding institutions that are a good match to their child's interests and abilities. Children in higher income neighborhoods are more likely to have day-to-day contact with professionals who can offer opportunities for internships and information about career paths.

To compensate for the lack of access and resources, NGVF provides and helps students use online tools in the college search; programs such as TEAK Fellowship and SEO connect them to adults who assist with one-on-one college counseling. Internships introduce students to the world of work, make the connection between college and career explicit for students, and forge connections with helpful, knowledgeable adults. Through these kinds of program components, students are able to accrue tacit knowledge about educational paths and careers and receive valuable, practical support that more advantaged students can more easily acquire through contacts with family members and other individuals within their social spheres and communities.

Augmenting Student Support Networks

All the programs featured at the Summit provide opportunities for students to be in classes with other bright, talented students, whether in school or outside of school, and thus cultivated peer support for high academic achievement. Some of these involve children from different schools, different states, or even different countries, thereby significantly expanding students' peer networks and worldview and providing rich discussion opportunities that increase the challenge level for the students involved. Programs such as NGVF, TEAK Fellowship, and Project EXCITE assign students to educational advisors and/or adult mentors who give general emotional support and encouragement, provide specific educational advising to students (e.g., what sequence of classes to take), serve in a liaison role and as an advocate for the student with his or her home school, and assist parents who have limited experience with the educational system in supporting their child's academic goals. Mentors build warm, supportive relationships with students, introduce them to college life, and expose them to careers. These individuals add to the number of significant adults that students could turn to for aid or assistance outside the family and generally increase social support for high achievement and commitment to long-term goals. Some programs (Project EXCITE, NGVF) have parent education components aimed at increasing knowledge about giftedness, appropriate coursework, and higher education options, resulting in increased support from family members for higher achievement goals. Having many knowledgeable adults in a student's social network and the confidence to access them for assistance has been cited as a critical factor in the educational success of low-income, minority gifted students.[55]

Although the successful programs and program components featured at the Summit (see Appendix A) are not exhaustive, there is much to learn from them. Collectively these programs highlight the importance of building comprehensive talent development paths with programming for low-income, high-ability learners that begins in kindergarten (or earlier) and continues through grade 12 and beyond. These paths must have multiple entry points that serve as gateways to advanced programming. Assistance in the form of additional academic support and guidance, extended learning time, and augmented social support must be provided to smooth significant transitions and enable students to stay firmly on these paths.

Program Replication
and Scale-Up Challenges

An important question for school-based programs for low-income, high-ability students is their generalizability to other sites and settings. Which programs can serve as models for other schools and districts to implement? Which critical features and infrastructure supports need to be present in order for replication and transfer to be successful? For example, smaller districts may be significantly challenged to offer programs such as IB or Middle Years or a wide range of AP courses or to find qualified teachers with expertise in key content areas. Distance education alternatives might be an option for smaller and rural schools. Professional development for teachers in gifted education practices and the unique characteristics of low-income, high-ability students is vital to the success of efforts to identify and develop the talents of more low-income, high-ability learners and essential for improving success rates with these students. Making this training more widely available to teachers and school administrators may be difficult for rural and high-poverty schools and more creative options and flexibility are necessary here.

For outside-of-school, supplemental programs, scale-up is an issue, as is sustainability. The programs highlighted at the Summit (see Appendix A) serve relatively small numbers of students and spend considerable funds per student ($1,200 to $10,000 per student per year), most of which comes from grants. When grant funding ceases, services to students also cease unless additional funds or other resources for continuation are secured.

A question raised by Summit participants was whether and how successful outside-of-school program models could be translated to and replicated within school settings. There were some examples of supplemental programs targeting students from particular school districts for their services and working closely with local school administrators to customize program components to meet school-specific needs. Project EXCITE collaborates with a local elementary school district to identify students and uses personnel from both the elementary and secondary districts to provide some of the services to students and families outside of school time. Partnerships between supplemental programs and schools and districts were suggested as a way to bring the valuable supports provided by outside-of-school programs to more students, more economically. To increase sustainability, Project M^3 curricula was adapted for math enrichment programs and clubs and incorporated into existing after-school programming at several sites. Creative approaches to combining and customizing models to meet the needs of specific populations of gifted students within particular geographic contexts will be key to the success of any program or intervention. Knowledge about key components or patterns from all successful programs gleaned from research will be most helpful in these efforts.

It cannot be ignored or discounted that whether gifted children's abilities are noticed and developed depends largely on where they live.

More Than Ability Is Required:

Psychosocial Issues and Skills Needed for Success

We all know that it takes more than ability to be successful in school and in adulthood. This is true for all individuals, including those who are gifted. What is unclear is which noncognitive or psychosocial variables are most important for success for these students and of these, which variables can be cultivated and developed so as to increase the likelihood of students' success.[56]

One of the recommendations that came out of the Summit regarding future research was the need for more comprehensive studies of the psychosocial and non-cognitive characteristics of students from low-income and/or minority backgrounds who succeed despite obstacles and significant hardships, so as to inform practice with these students. At present, there are only a few studies of these gifted students but they give us some insight into important characteristics to cultivate in students.[57] Though their identities were still being formed, successful low-income, high-ability African American and Latino students had a strong belief in themselves and their ability to succeed through their own efforts, which often resulted from opportunities to take on and succeed in highly challenging learning experiences. Similar to factors that enable success for all high-ability students, these students had high educational and career aspirations and were extremely motivated to accomplish them. They demonstrated a strong work ethic and commitment to study. Their families were emotionally supportive and they had extended family and other adults such as teachers, coaches, mentors, and church leaders to turn to for additional support and guidance. High self-esteem gave them the confidence to actively seek advice and assistance from adults outside the family when they needed it. They had a peer network of other students with similarly high goals and commitment to academic achievement who provided psychological, emotional and social support to remain on track despite setbacks or obstacles. They were confident in their own racial identity and open to multicultural experiences, including friendships.

The Important Role of Non-Cognitive Factors in High Achievement

Some scholars and researchers assert that non-cognitive variables, particularly psychological characteristics such as drive, grit, and motivation, are as or more important to achievement than ability, particularly at the later stages of talent development.[58] Other characteristics that have been put forward as having a significant role include intellectual risk taking, self-confidence, academic self-concept, self-discipline, mindsets, self-efficacy, and resiliency in the face of failure or disappointment.[59] These characteristics, and the beliefs that underlie them, impact students' willingness to participate in challenging classes and programs and put forth the effort to succeed in them. While many psychological variables affect student achievement, we focus on several that seem especially critical and malleable.

Mindsets. An important variable affecting the achievement of all students is their beliefs about intelligence and ability— or their mindsets.[60] Students who believe that ability is malleable as opposed to fixed are focused on learning, growth, and improvement and embrace challenge because of the opportunity to grow intellectually and gain competence. They can persist in the face of setbacks and believe that through effort and study they can improve their academic performance.[61] Aronson and Juarez[62] found that students' vulnerability to stereotype threat is lessened if they hold a growth mindset about intelligence, a view that can be actively promoted by teachers and parents. Educational environments that foster and convey a more malleable view of ability and stress effort over innate ability are more likely to create a sense of belonging for low-income and culturally

and linguistically different students, which is critical to retaining females in STEM fields or attracting underrepresented minority students to rigorous academic programs.[63]

Research on individuals who make creative contributions to society points to the importance of persistent effort over long periods of time, referred to as "grit" by Duckworth and colleagues.[64] Other researchers and writers have approximated that major creative achievements are preceded by as many as 10,000 hours of deliberate practice or 10 years of continuous work in a field.[65] The role of effort, combined with high ability, cannot be overstated. Mindsets that emphasize effort and the value of academic achievement for one's future are the levers that make students believe that success is within their control.[66] Increased self-efficacy leads to the use of appropriate and varied learning strategies in the classroom and cultivates persistence and motivation for longer-term achievement goals.[67] Parents and teachers can cultivate a growth mindset at home and within their classrooms through their verbal praise and messages to children about their effort, work, and achievement.[68]

Motivation: Can I do it and do I want to? Researchers propose a dual-level view of motivation affecting academic choices[69] that boils down to "Can I do it and do I want to do it?" If students believe that doing well in school is important to their future success and will reap the same rewards for them as for other groups in society, they are more likely to work hard to get good grades. If students believe that they can succeed in challenging classes, they are more likely to put forth the effort needed to qualify for those classes. If students believe they are welcome in advanced courses and teachers expect them to do well, they are more likely to bounce back from setbacks with increased effort and persistence. Success in advanced programs and courses also develops and enhances self-confidence, self-efficacy, and growth mindsets, and increases students' perceived value of academic tasks and opportunities. Psychological characteristics supportive of high achievement can be cultivated; one way to do so is to help students experience academic success.

Psychosocial Factors Unique to Marginalized Gifted Students

Although psychological factors affect the motivation, and therefore, the achievement of all students, researchers have identified several factors that are both unique and particularly potent for students who have been historically underrepresented in advanced and selective programs of study, including gifted programs. Knowing how and when these factors might be at play for students can help educators understand students' achievement-related decisions and create contexts that are more supportive of high achievement. These factors have been studied most with African American students, less so for other cultural, socioeconomic, and racial groups.

Stereotype threats. Stereotypes about the abilities of culturally and linguistically diverse students exist and for some groups, are largely negative, depicting them as less intelligent, less personally ambitious, and less interested in school.[70] Through a process labeled stereotype threat, the awareness of these negative perceptions and beliefs can affect students' test performance, their willingness to engage in challenging academic activities, and as a result, their long-term academic development.[71] Stereotype threat can affect the performance of any group for which negative stereotypes exist in an area of achievement (e.g., females gifted in math and science).[72]

Some students may feel challenged to work harder to disconfirm negative stereotypes but simultaneously worry that increased effort means they are not as smart as they thought or as capable as others who appear to have to work less.[73] Other students may choose to disengage completely and adopt the view that academic achievement is not important to their future or worse, not relevant to their personal identity.[74] Research suggests that high-achieving, African American students are more vulnerable to stereotype threat than lower achieving children.[75] So too are students who care more about achieving in a particular subject or domain,[76] putting the students most likely to succeed and benefit from gifted programming, and those most motivated to achieve at the greatest risk. At present, research has validated the existence of stereotype threat and documented its effect in many different and primarily laboratory-based contexts. More research is needed on successful interventions to mitigate stereotype threat in real-life contexts such as school.[77]

Affiliation versus achievement: An unnecessary choice. Gifted children have the same needs for friends and validation from peers as any child. For some gifted children this may be more difficult because discrepancies between their advanced level

of intellectual development, coupled with more age-appropriate levels of development in the social and emotional realms, make it harder to find age-mates or others who truly understand and accept them. This can be exacerbated if a school or district does not have programming that groups gifted students together at least part time.[78] Gifted children, like all children, thrive on the social support they receive from friends and peers who share their interests and commitment to high achievement and relate to their unique experiences as a gifted child.[79]

Research shows that gifted children are affected by their social environments and develop varied coping strategies in response to the ridicule, rejection, or isolation that can occur because of their high academic achievement. Some of these strategies are healthy and productive and some have potentially devastating effects on students' talent development and psychological health.[80]

All advanced students, not just those formally identified as gifted students, are well aware of the potential social costs of high achievement and some will go to great lengths to hide their giftedness, deny it, avoid challenging academic programs, or underachieve to prevent identification as a high achiever.[81]

Negotiating the tensions between high academic achievement and social acceptance may be especially challenging for gifted students from racial and cultural groups or from geographic communities that are communal and socially oriented as reflected in strong kinship networks and/or large extended families.[82] For these students, group support from peers "represents a mechanism for cultural preservation, group preservation, and social identity."[83] Accusations that taking part in challenging academic classes, achieving at a high level, or studying hard are "acting White" can threaten students' social group membership[84] and prevent them from taking advantage of talent development opportunities inside and outside of school.[85] Some individual students obtain needed peer support by finding a small group of like-minded friends in school or are able to persist without it by relying more on family support. But this may come at a psychological cost for students and efforts are needed to help more children find peer support and create more positive school environments.

Dual identities. For culturally and linguistically different students, racial/ethnic identity can play a critical factor in their academic achievement. For minority students, including gifted students, racial/ethnic identity has been found to be negatively related to academic achievement.[86] However, research suggests that this relationship may not exist in all educational contexts and was not found in a special summer talent development program for gifted students.[87] Having a dual identity, that is, a strong sense of belonging to one's own ethnic group alongside the willingness to engage in the larger multiethnic, multiracial society was positively associated with academic achievement among African Americans, Latinos, and Native Americans.[88] The successful, high-achieving minority students that Hébert[89] studied were also characterized by a strong multicultural awareness and appreciation of diversity.

Students across racial or geographic groups experience similar conflicts between the need for achievement and the need for affiliation (e.g., Hispanic females desiring to stay within or close to one's family and community for higher education; rural families fearing their children will move away from their communities for higher education and not return). They also experience conflicts between cultural values and current educational practices (e.g., Native Americans' preference for noncompetitive educational environments).[90] Helping students to negotiate the different worlds of home, community, school, and larger society; build a psychological identity that enables them to integrate multiple values and expectations with high academic achievement; and live happily and successfully in all these spheres is critical to their talent development.

If we are to significantly increase the number of low-income and culturally and linguistically different children who are achieving at the highest levels in all grades, we must pay equal attention to their psychosocial needs and skills. Confidence in one's abilities, a strong belief that effort and study matter most in terms of achievement, dual cultural identities, coping skills to deal with discrimination and peer rejection, and resiliency to persist in the face of setbacks and obstacles are all characteristics that need to be actively addressed and cultivated in promising students. These skills coupled with opportunity and support will enable more students from low-income and culturally and linguistically diverse backgrounds to succeed at the highest levels of which they are capable.

Policies and Action Initiatives

to Promote Talent Development of Low-Income, High-Ability Learners

For better or worse, policies mirror priorities and actions speak louder than words. Currently, national and many state, district, and school-level policies and practices do not reflect a commitment to the talent development of low-income, gifted students. As a nation, we are concerned with the achievement of low-income and minority students, but have not focused on advancing more of those students to exceptional levels of performance and achievement. To move forward, we must ask ourselves whether aiming for minimum performance levels for all students is an acceptable singular goal for the nation and whether achieving minimum levels requires that we abandon support for a goal of more students reaching advanced levels of achievement. The answer to both questions must be an emphatic "NO" if our nation is to continue as a leader in the global knowledge- and innovation-based economy.

However, despite concerns expressed from all sectors of our society, including educators, parents, legislators, and business leaders, about the need to develop as many individuals with high levels of talent in all areas as is possible, we have no coherent, national plan to identify and develop the talent and abilities of our highest achieving and highest potential students. This is perhaps most problematic for promising low-income and culturally and linguistically diverse students, who are now literally languishing in our schools. Much can and must be done to improve the current situation. The following suggestions represent but a start in the right direction.

Increase Expectations

We must expect more than proficiency from many more students. Policies, funding, and practices at all levels should consistently support high expectations and high achievement, going well beyond grade level for many more of our students. The Common Core State Standards[91] movement is a very promising development, in that the standards raise the proficiency goal for all students. But that is not enough. We must also have a clear definition of advanced levels of learning on state tests and work to both increase the overall number of students achieving at that level and close the racial and economic gaps between groups who achieve that level. We should also set goals of significantly increasing the number—and closing all gaps between groups—of U.S. students performing at advanced levels on the NAEP exam and performing at excellence levels on PISA. Critical to any efforts to raise expectations for the achievement of low-income students is ensuring the availability of a teaching force, especially in high-poverty schools, that has deep content area expertise in all subjects.

Support High Academic Achievement

As we increase expectations, we must make available a host of strategies that support student achievement at the highest levels, such as providing more public STEM schools, implementing gifted education pedagogy that can improve all student achievement, and incorporating training in gifted education methods into preservice and in-service teacher education, especially training on identifying and serving high-ability, low-income, and culturally and linguistically diverse students. It is important to continue expanding access to Advanced Placement and International Baccalaureate programs, with an increased emphasis on raising exam scores. All gifted students can benefit from participation in summer academic programs that provide extended contact with intellectual peers, enriching, challenging content, and exposure to college, but it is particularly important for students who may not experience this in their home schools. Outside-of-school, supplemental programming can be gateways to gifted education programs for low-income, high-ability learners. In some cases, students will need increased learning time through extended educational opportunities after school, on weekends, and during the summer to catch up to or keep up with the achievement of their more advantaged age peers.

Start Early

It is critical to support eager, bright minds as early as possible by providing content-based enrichment in preschool

and early elementary school and by identifying high achievers early and providing programming and services, including challenging content in academic domains, that help keep them at the top levels of achievement as they progress through school. In addition, it is important to make the development of psychosocial skills and a psychological identity supportive of continued commitment to high achievement a vital part of gifted programming, beginning in early elementary school.

Provide a Range of Supports for Students

Because not all high-ability students have equal resources to support their learning at home or in the community, and because many are keen to learn more about what practicing professionals do on a daily basis, it is important to engage communities to support in-school learning and augment the curriculum with increased outside-of-school opportunities such as mentorships, apprenticeships, tutoring programs, and other social services. Students can learn much about possible educational and career paths from these opportunities as well as receive reinforcement for increased study and effort from successful role models. Increased social support from knowledgeable adults can help students coalesce a psychological identity that will enable them to cope with obstacles and persist on a path of talent development towards an envisioned future. Because family support is so critical to the achievement and persistence of students, programs must also work with parents to help them understand the unique psychological and cognitive needs of their gifted children and advocate for services and programs to meet them. It is also important that more low-income, high-achieving students receive the college counseling they need to find and matriculate at colleges commensurate with their levels of achievement.

Remove Barriers

Advocates for high-ability students should look for opportunities to eliminate obstacles to participation in gifted programs and services. For example, state and local definitions of giftedness, as well as identification policies, should include academic potential to capture marginalized and underidentified gifted students and ensure that district communications about services for advanced students are available in the languages spoken in students' homes. Additionally, district and school policies and practices that inhibit students moving through the curriculum at a pace commensurate with their ability and interest should be revised and policies adopted that emphasize mastery over seat time for course credit.

Use Reform Initiatives to Support High Ability

A host of changes are needed to support high-ability students as education leaders and policy makers focus on school reform efforts. For example, discussion about achievement gaps and the strategies and resources needed to close them should include discussion of excellence gaps. Similarly, conversations about curriculum, standards, and intervention decisions (e.g., Response to Intervention [RtI], heterogeneous grouping) should include consideration of their impact on high-ability students. Additionally, ensuring that growth models are used to measure student learning with all learners, including high achievers, would help educators set appropriately high learning goals for all gifted students. It is also critical to disseminate information on school-based and outside-of-school program models that have been successful in promoting the talent development of low-income, gifted learners so that these programs can be replicated or customized to other settings.

Invest in Research Tied to Effective Practice

Because children are different and their environments vary, it is essential to cultivate a robust research agenda concerned with determining the conditions under which interventions are effective and with whom. It is essential to identify successful program models and interventions that work with low-income, high-ability students from different geographical, cultural, and racial backgrounds so that zip code and socioeconomic status are not the determining factors for receiving a challenging education. It is critical that these programs be cost-effective, and thereby can be scaled to large numbers of students in a sustainable way. Research that proves efficacy of programs that cannot be replicated will not adequately advance student outcomes, especially for low-income and minority students who attend schools and live in communities with limited resources. Summit attendees recommended a series of research questions that could guide researchers towards these goals.

Moving Towards a New Paradigm:
Expanding Our Understanding of Gifted and Talented

Although the Summit participants identified a number of successful program models to emulate, best practices to implement, and important psychological skills to cultivate, a lingering concern was how to gain a deeper understanding of the roles of geography (rural vs. urban vs. suburban), race, and culture on the implementation and success of any school-based or supplemental program or intervention. Each of these variables alone has significant effects on students' opportunities and experiences in the educational system. Each factor is complex and multifaceted and one does not trump another in terms of importance. Lack of financial resources may affect students' participation in tuition-based, outside-of-school programs, but also cultural beliefs about giftedness may prevent some students from choosing to attend these programs.

Categorical designations such as rural, urban, Hispanic, or Asian American fail to capture the variation in levels of poverty, opportunity, and education within the subgroups included within each category. These variations interact to have different effects on educational opportunities and outcomes for different geographical, cultural, and racial groups. This means that a one-size-fits-all approach to increasing the identification and talent development of low-income learners may result in programs and services that do not truly benefit students. Summit participants summarized this perspective with the statement, "We need to know what works, with whom, when, and in what doses." The research questions generated by Summit participants indicate what is most important to study and understand in order to be able to answer this important challenge.

As we strive to develop services for low-income, high-ability students, our goals for the learners are the same as for other high-ability students: a psychological identity that supports achievement; increased access to challenging curricula and entrance into gifted programs; success in the most advanced and accelerated programs such as AP classes and IB programs; and matriculation at selective institutions of higher education. However, as we have learned from research and examples of best practices, we must reach them by using a variety of strategies and approaches that best fit and build upon the socioeconomic, cultural, racial, and geographic characteristics of the students involved.

> Currently, national and many state, district, and school-level policies and practices do not reflect a commitment to the talent development of low-income, gifted students

Best Educational Practices
with Low-Income, High-Ability Students

Gifted students from low-income backgrounds, including those who are culturally or linguistically different, share many of the personal traits and characteristics of gifted students who are not. However, because they may have had fewer opportunities to gain the academic background knowledge needed to be successful in school and may have unique psychological and social issues as a result of poverty and marginalization, different and distinct approaches to identification and programming are sometimes necessary to fully develop their talents and abilities. After presentations and discussion at the 2012 NAGC National Summit on Low-Income, High-Ability Learners, participants who work closely with these students developed the following list of recommended best practices that is informed by research and practice and follow these general assumptions:

- Poverty and minority status are not the same. Although there is overlap, poverty manifests differently based on geography, ethnicity, and race.
- Poverty is pervasive and includes students from rural, White, urban, African American, Hispanic, Asian, and other cultural backgrounds.
- Typical characteristics of gifted students may manifest differently in low-income, high-ability learners.

Identification Practices

Identification practices should be inclusive, culturally responsive, cast a wide net, and begin early to get a holistic assessment of students. Other recommendations include:

- Use multiple and varied types of assessments including tests, observational data, and rating scales with adequate technical qualities (see NAGC position paper on assessment, www.nagc.org,) that are appropriate to students' cultural backgrounds and language.
- Provide multiple entry points into gifted programs (e.g., offer opportunities for students to retest or qualify for programs at later times as their skills develop).
- Create multiple pathways (e.g., qualify on the basis of test scores and/or a portfolio) into gifted programs.
- Evaluate students' potential for advanced study in view of previous learning opportunities by using local and subgroup norms.
- Mine assessment data for patterns of performance that indicate upward trajectories and rapid growth and improvement.
- Present students with challenging curriculum and monitor response as a means to identify and collect evidence of advanced academic potential.
- Identify giftedness for subsequent talent development but also develop talent to subsequently identify giftedness.
- Provide training to all teachers that focuses on the importance of respecting and valuing cultural differences, irrespective of socioeconomic status, and prepare them to become better talent spotters for all gifted students.

Programs and Services

Programming and services for low-income, high-ability students must be culturally responsive, should always include challenging curriculum and opportunities for extended contact with peers, and should have a strong focus on the development of both cognitive and psychosocial skills. Recommendations include:

- Provide challenging, enriching learning experiences to all students as early as preschool.
- Create preparatory programs that intensely

frontload challenging curricula aimed at preparing students to succeed in gifted programs.
- Use challenging and enriched instruction with underperforming, high-ability students that is designed to develop advanced skills, rather than remediation, in order to fill in skills or content gaps.
- Provide training in advanced content in areas in which teachers lack a strong background.
- Increase learning time and provide further opportunities for advanced learning through after-school and summer programs.
- Include as a critical aspect of programming opportunities for gifted students to be together so they can form friendships and receive support from peers.
- Create talent development paths for students that are comprised of continuous opportunities for appropriately advanced and enriched curriculum (e.g., pre-AP to AP, Middle Years IB to IB).
- Create partnerships with local institutions of higher education or community organizations in order to provide more comprehensive services such as internships and mentorships to students and augment students' social networks with supportive adults and peers.
- Ensure that curriculum is multicultural and enables students to make connections to their lives.
- Infuse learning opportunities into the curriculum that cultivate psychological skills that support continued commitment to high achievement, including attitudes towards effort and learning.
- Create parent programs that simultaneously build cultural and social capital among families and capitalize on the strengths of families to support their child's talent development.

Supportive School Cultures

School cultures that exalt individual differences of all kinds and value and reward high academic achievement create contexts in which low-income, high-ability students from all backgrounds can thrive. Recommendations to create such environments include:

- Create a school culture that values individual differences of all kinds, including cultural and linguistic differences, and sees these as assets rather than deficits.
- Create a school culture that values and rewards intellectualism and academic achievement in all students.
- Provide multicultural training (e.g., racial, geographical, socioeconomic) to all educational staff focused on eliminating deficit thinking.
- Examine policies and procedures regarding the identification of giftedness, selection for advanced programs, and curriculum within programs to ensure that they do not inadvertently present obstacles or disincentives to low-socioeconomic students.
- Create a school culture that views parents and the community as partners in the education of their children and values and actively cultivates their input and participation.

A list of best practices will remain just that unless it is coupled with a commitment to looking at low-income and culturally and linguistically diverse students from a different lens and from a perspective that emphasizes strengths instead of weaknesses, differences rather than deficits, possibilities as opposed to limitations, and solutions instead of obstacles.

Research Agenda
to Support Low-Income, High-Ability Students

One of the major goals of NAGC's 2012 National Summit on Low-Income, High-Ability Learners was to assess the existing research and literature base about the characteristics and development of low-income and culturally and linguistically diverse gifted students. We also sought to distill best practices from existing successful school-based and outside-of-school programs. Summit participants concluded that the knowledge base is thin regarding these students. For example, we know little about the characteristics of students who "make it" and successfully traverse the educational system to enter selective institutions and high-level professions and careers. Additionally, although we can speculate on obstacles and impediments, there is not a deep understanding of how these intersect with race, culture, gender, and domain of talent. Similarly, we have only a limited understanding of successful program models and interventions and even fewer that can be replicated economically. It will require substantial, sustained research to develop a comprehensive picture of the paths of low-income and culturally and linguistically diverse students in order to understand what their experiences are, where in their journeys they are most likely to falter and why, and what helps them most to stay on track. The research questions below, identified by Summit participants, focus on three key areas:

- the nature and development of psychosocial characteristics of low-income, high-ability learners;
- barriers to their participation in programs for gifted students; and
- characteristics of instructional strategies and programming found to be successful with this special population of learners.

Psychosocial Questions

1. Individual Characteristics

- What are the psychosocial characteristics or skills of successful students from diverse socioeconomic, cultural, and racial backgrounds (e.g., grit, self-control, delay of gratification, self-efficacy, resiliency, multiculturalism)?
- What adaptive strategies and processes are used by individuals and families to compensate for a lack of economic or social capital?
  - ❑ Which of these strategies appear to be most effective, and for whom?
- What are the factors that successful individuals identify as having contributed to their acquisition or development of key psychosocial characteristics, skills and strategies (e.g., experiences, mentoring, modeling)?
  - ❑ Do these factors vary by domain of talent (e.g., math, art, music) race, gender, or culture?
- How do social identity variables such as ethnic and racial identity and other psychological variables such as self-esteem, self-efficacy, and stereotype threat explain achievement patterns among traditionally marginalized groups of gifted students?
  - ❑ Do the effects of these variables vary by age?

2. Psychosocial Skill Development

- Is there an optimal sequence for the development of psychosocial skills critical for high achievement and how does this correspond to the development of students' cognitive skills?
- How can psychosocial characteristics and skills critical to the development of talent among low-income, high-ability learners be systematically developed and taught?

- What impact do developmental factors make in the learning or acquisition of psychosocial skills?
  - ❑ What roles can families, teachers, mentors or others play in their development or acquisition?
  - ❑ What are the most important characteristics of those who teach or coach these skills for low-income, high-ability learners?
- What specific interventions have been successful in helping low-income, high-ability learners acquire psychosocial skills that support a continued commitment to high achievement?
- Would low-income, high-ability learners benefit from the creation of a specialized curriculum to address their unique social-emotional and psychosocial needs, and if so, what would it look like?
- Do current models of achievement-related decision making generalize to gifted low-income and culturally and linguistically different students?
- What aspects of models for psychosocial skill development and coaching employed by sports and performing arts can be applied to academically talented students?
  - ❑ Are some aspects of sports or performing arts skills development especially effective for working with low-socioeconomic students?

Identifying Barriers, Increasing Participation

1. Views Held by Professionals

- What are the perceptions of and assumptions about the prevalence and characteristics of low-income, high-ability children held by teachers, school psychologists, and administrators, and how are these views formed?
- What strategies (e.g., professional development, preservice training, direct classroom experience with students) work best in helping teachers, school psychologists, and school administrators acquire a more accurate, non-deficit-based perception of low-income, high-ability learners?
- How does changing perceptions about students relate to changing expectations for achievement?

2. Identification Issues

- What are the indicators of advanced potential in children from low-income backgrounds?
- Is giftedness manifested differently for low-income children? Does this vary by domain, cultural, or geographic group?
  - ❑ If so, can we identify these indicators and use them reliably for identification, placement and services?
- What strategies are more successful in identifying talent among low-income and culturally and linguistically diverse gifted children (e.g., use of standardized testing with local norms, training teachers to document behavioral indications of talent in response to high-level curriculum, use of multiple and varied criteria, mining data for patterns of growth and progress)?
  - ❑ Do best strategies for identifying talent vary by race, gender, and culture?
- Do definitions of giftedness that emphasize individual high ability and/or high demonstrated achievement negatively impact the identification of these students?
  - ❑ Does the impact differ by race, gender, and culture?
- What definitions promote identification of these students?
- To what extent can the label "gifted" act as a barrier to high achievement for low-income, high-ability learners?
  - ❑ Does this vary by race, gender, or cultural background?
- What school policies, procedures (e.g., nominations by parents, testing applications), or program models (e.g., programs that place students away from their neighborhood school) act as barriers or promoters to the identification and talent development of low-income, high-ability learners at every level of schooling?
  - ❑ Does the impact differ by race, gender, and culture?

3. Families and Communities

- What family beliefs (e.g., beliefs about giftedness) or community variables (e.g., beliefs that higher education will cause students to reject their community) act as potential barriers or supports for the talent development of low-income, high-ability learners?
  - ❑ Do these beliefs vary by race, gender, and culture?

Program and Instruction Questions

1. Curriculum and Instruction

- What are the critical elements of a curriculum that elicits evidence of advanced potential among low-income, high-ability learners?
- How does curriculum support the success of low-income, high-ability learners?
  - ❑ What are the most important elements? Do these elements vary by race, gender, and culture?
- To what extent do particular instructional strategies act as a barrier or promoter (e.g., group-cooperative vs. individually based learning activities; visual vs. auditory instructional activities) of the talent development of low-income children?
  - ❑ Does the impact vary by race, culture, and gender?

2. Successful Programs

- What are the components of successful school-based or outside-of-school program/intervention models for low-income, high-ability learners (e.g., parent education programs, internships, supplemental classes)?
  - ❑ Where are there successful examples of these models?
- How effective are models that increase learning time in producing high levels of achievement for low-income, high-ability learners?
  - ❑ If they are effective, what are the most promising approaches for increasing learning time within schools and districts (e.g., summer, after school, weekends) and is this different for older versus younger students and vary by race, geography, and culture?
- What are critical components for low-income, talented learners in effective day and residential school designs?
  - ❑ Do race, gender, and cultural background matter and if so, in what ways?

3. Program Development

- How can we build service models within schools or districts that provide programming for both students with emerging talents and underdeveloped potential as well as students with developed talent that is demonstrated in high achievement?
- What are effective models for successful partnerships to support low-income, high-ability learners between school districts and other institutions and/or community organizations?
  - ❑ What factors contribute to the success of partnerships and their sustainability?
- Which components of outside-of-school programs can be transferred and used by other schools and districts?
- What models of outside-of-school programs have the most potential to be scaled up and economically feasible?

4. Teacher Preparation and Development

- What teacher education and professional development models and approaches work best in preparing all classroom teachers to identify and work effectively with low-income, high-ability learners?
- How do these models impact teacher attitudes or aspects of instructional practice?
- What are the most effective ways to disseminate the research results and related professional development to personnel who work with low-income students?
- What gender, racial, and cultural differences of and between students and teachers need to be considered in designing and delivering professional development to teachers?

We offer this research agenda to researchers within gifted education and to those who study poverty, educational systems, urban or rural education, and affective development, to name a few areas. There is much to be learned about students who are currently disenfranchised from the best that our educational system has to offer; we are confident that new information from these research questions, and others, will not only inform best practices but also support numerous strategies that will open doors and clear paths towards increased opportunity, success, and self-fulfillment for all high-ability students.

Appendix A
Successful Programs that Support Low-Income, High-Ability Students

The eight programs described below were featured at the National Summit on Low-Income, High-Ability Learners, held May 30-31, 2012, in Washington, DC. For more information about the Summit, please visit the NAGC website at www.nagc.org.

Project M³ – Mentoring Mathematical Minds
Project M² – Mentoring Young Mathematicians

Projects M³ and M² are research based and field tested advanced elementary mathematics curriculum units designed to develop deep mathematical reasoning for students from all backgrounds, with a focus on students from disadvantaged backgrounds. The units develop critical and creative thinking through in-depth investigations in which students think and act like practicing mathematicians.

Overview

Both Project M³ and Project M² were collaborative research efforts under the direction of the Neag Center for Gifted Education and Talent Development at the University of Connecticut. Originally developed under a federal Javits program grant from 2002–2007, the Project M³ curriculum units were created by a team of national experts in mathematics, mathematics education, and gifted education for mathematically promising students in grades 3 through 5. The units were field tested with two cohorts in 11 public schools of varying socioeconomic levels in Connecticut and Kentucky. The National Science Foundation funded Project M², which was developed by the same writing team with the addition of an early childhood mathematics expert. The Project M² units were created for students in kindergarten through grade 2 and were field tested in 11 public schools of varying socioeconomic levels across Connecticut, Kentucky, South Carolina, and Texas between 2007 and 2012. Both projects have continued to demonstrate significant success; the curricula are now published and available to districts across the country.

Program Summary

Based on the NCTM content and process standards and connected to the Common Core State Standards for Mathematics, Projects M³ and M² are self-contained advanced mathematics curriculum units that emphasize problem solving, open-ended questions, and the spirit of inquiry. Project M³ contains 12 units, four per grade, with a focus on numbers, algebra, geometry and measurement, and data analysis and probability. Project M² contains six units, two per grade, with a focus on geometry and measurement. Project M³ units specifically target mathematically promising students while Project M² units are advanced units using gifted pedagogical strategies and differentiation for all learners including mathematically promising students.

Students assume the role of mathematicians as they solve real problems, conduct investigations and create projects. There is a strong focus on developing a mathematical community of learners through rich classroom discussions. In addition, there is a written communication component in each lesson in which students respond to "Think Deeply" questions by writing about their reasoning of the important mathematical concepts.

Results

Research studies consistently demonstrated results favoring the Project M3 and M2 cohorts over a similar like-ability comparison group from the same schools. There were two longitudinal studies of Project M³ cohorts from grades 3-5. At each grade level with both cohorts there were significant differences in gains on the Iowa Tests of Basic Skills and an open-response assessment based on released items from TIMSS and NAEP favoring the Project M³ students. In Project M², students in the field test also outperformed the comparison group with highly significant differences on an open-response assessment across all grades with large effect sizes ranging from 0.89 to 2.67. Teachers involved in the two research projects also exhibited growth in mathematics content knowledge across all grades.

Visit http://projectm2.uconn.edu/ and http://www.gifted.uconn.edu/projectm3/ for more information.

The Middle Years Program

The International Baccalaureate (IB) Middle Years Program (MYP), for students in grades 6–10, provides a flexible instructional framework of academic challenge that encourages students to understand the connections between traditional subjects and the real world, learn the values of tolerance and empathy to become responsible global citizens, and become critical and reflective thinkers who are able to communicate their ideas in multiple forms.

Overview

There are three IB programs for students ages 3–19, the Primary Years Program, the Middle Years Program and the Diploma Program. More than 3,000 schools worldwide use the IB program. Francis Scott Key Middle School (FSK), in Montgomery County, MD, was formally authorized as an IB World Middle Years Program (MYP) in 2009. This is a non-selective program, therefore, all students in grades 6–8 participate in the program. Students then matriculate to Springbrook High School and have the opportunity to complete the program in 10th grade.

FSK aims to

- Increase the percent of students enrolled in advanced courses (Algebra, Geometry, advanced English, foreign languages) and
- Prepare students to complete the MYP in 10th grade with the goal of them entering the Diploma Program and empowering them to be successful in college.

Program Summary

FSK offers a comprehensive, well-rounded program of study that focuses on:

- Intercultural Awareness: Students are given increased opportunities to learn about their own culture and the cultures of people from around the globe to learn values of tolerance and empathy.
- Holistic Learning: Learning connects to students' own experiences, topics in other school subjects, and situations in the real world.
- Communications: This focus helps students to develop competency in reading, writing, speaking, listening, design, and technology.

Classroom practice moves from teacher-centered instruction to student-centered learning. There are eight content areas: Arts, Humanities (World Studies), Language A (English), Language B (French or Spanish), Math, Physical Education, Science, and Technology. MYP requires that each student study each content area for a minimum of 50 hours per year.

Results

FSK keeps quantitative data on students' progress towards the three program goals. Since 2009 there has been a significant improvement in quality of student communication, active participation, conversation, writing, and analytical thinking.

Visit http://www.ibo.org/ to learn more about the MYP. More information about MYP at Francis Scott Key Middle School is available at http://www.montgomeryschoolsmd.org/schools/fskms/

Next Generation Venture Fund

The Next Generation Venture Fund (NGVF) is a scholarship program that invests in academically talented high school students from African American, Latino, and Native American backgrounds to prepare them to enter the nation's selective colleges.

Overview

NGVF was established in 2003 and is now a national joint venture between Duke University Talent Identification Program (TIP), Johns Hopkins Center for Talented Youth (CTY), the Northwestern University Center for Talent Development (CTD), and the Center for Bright Kids (CBK). NGVF builds a pipeline for high-potential students from diverse backgrounds that leads to success in middle school, high school, college, and careers by providing opportunities and leadership roles that otherwise might be missed. The NGVF students are Talent Search participants with qualifying SAT/ACT scores who show demonstrated financial need. They are enrolled in the program from 8th-12th grade. There are currently more than 500 NGVF students and 300 alumni.

Program Summary

NGVF provides scholastic, personal, and social enrichment to students through the following benefits:

- An Educational Advisor who creates a personalized academic and extracurricular plan based on the need of each student and also provides counseling and assistance in the college application process.
- Workshops each semester for the student and family in the student's hometown.
- In-person meetings with the student's school counselor.
- Phone conferences and check-ins with students and their families.
- Two summer academic programs at their Talent Search locations.
- An entrepreneurship program, BizCamp, hosted by the Network for Teaching Entrepreneurship.
- Kaplan SAT and ACT online and classroom courses.
- College Essay consulting.
- Rigorous, advanced, college-level courses, available on campus and online.
- Career and leadership development programs.
- Mentoring.
- Networking opportunities to connect students to each other and supportive individuals who can broaden their horizons and promote their development.

Results

NGVF students have

- Achieved a 100% acceptance rate into college; almost 90% of which are ranked as "very competitive" or better schools.
- Enrolled in more AP courses and IB curriculum than their peers.
- Elevated SAT and ACT scores.

The NGVF Program that represents students in the TIP, CTD, and CBK regions is coordinated through the Duke TIP office. The JHU-CTY Scholars Program, formerly known as the Next Generation Venture Fund, that represents the CTY region operates from the JHU-CTY office.

Duke TIP: www.tip.duke.edu, JHU–CTY: www.cty.jhu.edu, NW–CTD: www.ctd.northwestern.edu, and CBK: www.centerforbrightkids.org

Project EXCITE

Project EXCITE, is an out of school, year-round program that aims to close the achievement gap between minority and non-minority students in honors and AP classes at the high school level by providing academic and social support services to minority students, in grades 3–8 who have advanced skills and interest in math and science, preparing them to be successful in advanced courses in high school.

Overview

EXCITE is a collaborative project among Northwestern University's School of Education and Social Policy through its Center for Talent Development, Evanston/Skokie School District 65, and Evanston Township High School District 202. Each year the program admits a cohort of 20–25 third-grade students from five public schools in Evanston.

Program Summary

Students receive enrichment in science and mathematics through summer, weekend, and after-school classes along with individual advising, parent seminars, and other outreach activities. Programming changes from year to year with a focus on preparing students for major transitions, including elementary to middle school and middle school to high school, and high-stakes testing. Students are also encouraged to take advantage of optional programs including a weekly tutoring program during the academic year and a 5th grade summer reading program in partnership with Evanston Public Library. Once students begin high school, they are placed into one of two academic support programs, either Steps Toward Academic Excellence or Advancement by Individual Determination.

Results

Over the past 10 years, EXCITE has experienced positive results around test scores and math placements.

- 60 point gains in reading and 72 point gains in math on the Illinois Standard Achievement Test, which has enabled EXCITE students to meet or slightly exceed average scores of white students from the district.
- 70% of EXCITE students complete one or two years of high school math before 9th grade.
- EXCITE students score well above the African American and Latino averages from the district, and meet the overall district average scores in math, science, and reading on the EXPLORE exam, which is taken during 8th grade and used for 9th grade course placements.

Visit http://www.ctd.northwestern.edu/excite/ for more information about Project EXCITE.

Project NEXUS – Linking Middle Schools to College Success

Funded through the federal Advanced Placement Incentive Program (APIP), the Maryland State Department of Education implemented Project NEXUS from 2005–2008 to expand opportunities for students from low-income families to gain access to challenging coursework that will help them prepare for the rigors of higher education. The project served the students at nine high-poverty middle and high schools in Maryland.

Goals

The goals of the program were to

- Improve the coordination and articulation among middle schools and the high schools they feed into to prepare students for Pre AP and AP courses and exams.
- Increase participation and performance of low-income students traditionally underserved in Pre-AP and AP courses and exams.
- Increase student, parent, and family awareness of the college planning process.

Program Summary

Through Project NEXUS, high-poverty middle schools and the high schools they feed into received grants to:

- Provide high quality professional development for teachers and guidance counselors to prepare students for academic rigor. These included a multi-day AP summer institute on how to develop Pre-AP teaching strategies in each content area, workshops at schools, and workshops for counselors.
- Develop middle school English, mathematics, science, and social studies instruction that is vertically aligned with AP courses and exams. Schools created vertical content teams from grades 6–12 who met regularly to design and implement instruction aligned with AP courses and exams.
- Establish a Maryland Business Round Table and university partnerships that offered career days, field trips, visits to area colleges, presentations by college speakers, and college planning events for students and their parents.
- Implement student and parent/family outreach activities that promote awareness of academic rigor and college preparation.

Results

Project NEXUS demonstrated gains from the 2004–2005 school year to the 2007–2008 school year in each of the following areas:

- The number of middle school students taking Pre-AP courses in NEXUS schools increased by more than 12% to 4,747.
- The number of high school students enrolled in AP courses increased by 23%.
- The number of AP tests taken increased by 21%.
- There was a 5% increase in the test takers scoring 3–5 on AP exams.

Information about gifted and talented programs in the state of Maryland is available at www.marylandpublicschools.org/msde/programs/giftedtalented

Sponsors for Educational Opportunity - Scholars Program

The SEO Scholars Program is a year-round, out-of-school program that provides academic and leadership development support to motivated urban public high school students so that they earn admission to and succeed at competitive colleges and universities. The SEO Scholars Program has served high school students in New York City since 1963 and launched its first class of 9th graders in San Francisco in 2011. The Program recruits motivated low-income students from approximately 100 public high schools and serves more than 300 students per year.

Program Summary

The program provides rigorous academic preparation for college, adding the equivalent of 60 school days to the public school calendar with classes after school, on Saturday, and during school breaks and the summers. Students follow a comprehensive roadmap that focuses on academic success skills, college knowledge, and leadership development in each grade 9–12. Content includes:

- Academic Success Skills: Coursework in critical reading, critical writing, grammar, vocabulary, and math. Study skills including time management, note-taking, and test preparation techniques; Weekday Mathematics Labs, Essay Writing Workshops, Tutoring and Homework help; and Test preparation for the PSAT, SAT, and the NY Regents exams.
- College Knowledge: Two-year college guidance mentoring program; Individual college advisement sessions; College trips and fairs, sessions with visiting admissions officers, and workshops for parents and family members on college admissions and financial aid.
- Leadership Development: Workshops; entrepreneur programs; Enrichment Programs: all juniors participate in an abroad, adventure, or academic enrichment summer program; Cultural enrichment field trips; Student-led community service projects; and Annual Demonstrations of Learning, where students present their accomplishments to teachers, parents, mentors, program funders, and staff.

While attending college, Scholars continue to receive mentoring and tailored workshops focused on managing coursework, earning top grades, financial and budgeting strategies, and effective planning for careers.

Results

In 2009 and 2010, SEO 12th graders eliminated the academic achievement gap with their peers nationally when comparing their SAT scores.

- The Scholars Program eliminated the gap between African American SEO high school seniors and their White counterparts at every GPA level.
- All of the 69 high school seniors in the Class of 2011 were accepted to four-year colleges.
- The average cumulative GPA of SEO College Scholars participating in the program is 3.12 as of the fall 2010 semester.
- 89% of students from the SEO high school class of 2007 report graduating from college on time.

Visit http://www.seo-usa.org/Home to learn more about the Sponsors for Educational Opportunity Scholars Program.

The TEAK Fellowship

The TEAK Fellowship is an out of school, year-round program that provides academic and personal support for talented New York City students in grades 7–12, from low-income families so that they will gain admission to and succeed at top public, private, and parochial high schools and ultimately selective colleges. It is committed to making the high school and college experiences as equitable and enriching as possible, so each Fellow may reach his or her greatest potential.

Overview

The TEAK Fellowship was founded in 1998. Qualified applicants are current New York City 6th grade students enrolled in public or parochial school that demonstrate financial need, leadership potential, high academic performance

on class work and standardized tests, and have a keen interest in learning. TEAK admits 30 sixth-graders each year and is currently serving 141 students in grades 7 through 12.

Program Summary

TEAK students are enrolled in after-school, Saturday, and summer programs over the course of the six years. Students also participate in internships and other enrichment opportunities.

- Preparatory Programs (grades 7 and 8): Students participate in after-school and Saturday classes throughout the school year and an intensive 6-week summer program, all of which focus on teaching a rigorous academic foundation.
- High School Placement: TEAK provides comprehensive support for each student's search and placement in selective day and boarding schools.
- High School Programs: TEAK provides four years of comprehensive programs and support including but not limited to: Deans who are TEAK staff members who are in regular communication with each Fellow and monitor their academic progress. Fellows attend leadership development forums together, are offered opportunities for enriching summer programs, and are expected to complete 115 volunteer hours at non profits.
- Mentoring: In grades 7–12, each student is matched with an adult professional mentor who serves as a positive role model, listener, advocate, and friend.
- College Guidance: TEAK offers comprehensive college guidance and counseling in 11th and 12th grades.
- TEAK also provides services to its alumni and sponsors a parent support group while the students are in high school.

Results

Since TEAK was founded in 1998:

- 100% of 8th grade Fellows earned admission to selective high schools, earning financial aid packages that fund, on average, 96% of total tuition costs.
- 100% of 12th grade Fellows graduated from high school and earned admission to 4-year colleges and universities, with $23 million in scholarships and financial aid.
- 87% of Fellows matriculated to top tier universities or liberal arts colleges, including 23% to the Ivy League. Their pursuits include a Fulbright Scholarship, finance, law school, AmeriCorps service, teaching, engineering, medical school, journalism, and a Ph.D. program in biochemistry.

Visit the TEAK Fellowship website at http://www.teakfellowship.org/

Young Scholars Program

The Young Scholars Program identifies low-income, high-ability students from diverse backgrounds in grades K–2 and provides academic and family support, preparing them for the gifted and advanced academic programs in grade 3 and beyond. This program is one facet of Fairfax County (VA) Public Schools' (FCPS) approach to closing the achievement between White and minority students and to increasing the representation of minority students in the school district's gifted programs, beginning in upper elementary school, and Honors, AP and IB programs beginning in middle school and high school.

Overview

First implemented in 12 schools in FCPS in 2002, the program is currently in 82 schools, serving more than 6,400 students. The Young Scholars Program identifies students from diverse cultural, ethnic, and linguistic backgrounds who are not likely to be considered for gifted programs using traditional methods of identification, and who are less likely to pursue advanced levels of learning without intervention. The focus is on early identification and intervention in grades K–2; however, students continue to be identified and served through grade 8.

Program Summary

The Young Scholars Program is built around the key concepts of early identification, ensuring the support of committed professionals, targeted in-school interventions, and extra-curricular engagements.

- Early identification focuses on grades K-2: At each school, classroom teachers in collaboration with the Advanced Academic Resource Teachers observe students, collect and review anecdotal records, create portfolios, and identify students who have advanced academic potential.
- Once identified, Young Scholars are clustered with teachers who are trained to differentiate curriculum and instruction in order to strengthen basic skills and develop their ability to think, reason, and problem solve at advanced levels.
- Summer school, after-school sessions, and field trips are all used to provide Young Scholars enriched, challenging learning experiences with intellectual peers from similar backgrounds.
- Parents/Guardians are active participants in the program through newsletters, workshops, and other learning activities.

Results

The number of students enrolled and the number of students prepared for advanced work continues to increase.

- In 2009–2010, 2,253 African American and Hispanic students were enrolled in the Young Scholars Program in K–8. In 2012 that number increased by 21% to 2,724.
- In 2009–2010, 963 Young Scholars were identified for secondary advanced academics. In February 2011 the number increased to 3,477.
- 3,477 of the 3,763 Young Scholars in grades 7 – 12, are taking gifted and talented, honors, AP, or IB classes and 76% are earning As and Bs.

Visit http://www.fcps.edu/is/aap/column/columnyoungscholars.shtml for more information about the Young Scholars Program.

Appendix B National Summit on Low-Income, High-Ability Learners | May 30-31, 2012

Featured Presenters

Paula Olszewski-Kubilius, NAGC
President
Director, Center for Talent Development
Northwestern University

Angela Duckworth
Assistant Professor of Pyschology
University of Pennsylvania

Chester Finn, Jr.
President
Thomas B. Fordham Institute

Jonathan Plucker
Director, Center for Evaluation & Education Policy
Indiana University

Frank Worrell
Professor & Associate Dean
University of California

Joshua Wyner
Executive Director, College Excellence Program
The Aspen Institute

Moderators, Panelists, and Responders

Karen Bond
Senior Director of External Relations
Center for Talented Youth
Johns Hopkins University

Jaime Castellano
Superintendent
Ganado Unified School District

Kourtney Cockrell
Coordinator for Project EXCITE
Center for Talent Development
Northwestern University

Tracy Cross
Executive Director
Center for Gifted Education
College of William and Mary

Joy Lawson Davis
Director, Center for Gifted Education
College of Education, Picard Center
University of Louisiana at Lafayette

Donna Ford
Professor of Special Education
Peabody School of Education
Vanderbilt University

Kathy Gavin
Associate Professor, Neag Center for Gifted Education and Talent Development
University of Connecticut

Renée Haston-Birch
Director
Duke-TIP-Next Generation Venture Fund
Duke University

Carol Horn
Coordinator, Advanced Academics
Fairfax County (VA) Public Schools

Julian Johnson
Senior Vice President
Sponsors for Educational Opportunity

Tiombe-Bisa Kendrick
School Pyschologist
Miami-Dade County Public Schools

Beth Onofry
Associate Director of Post-Placement
The TEAK Fellowship

Jeanne Paynter
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Maryland State Department of Education

Myriam Rogers
Principal, Francis Scott Key Middle School, Montgomery County (MD) Public Schools

Del Siegle
Professor & Head of Educational Psychology Dept.
University of Connecticut

Tamra Stambaugh
Director of Programs for Talented Youth
Vanderbilt University

Rena Subotnik
Director, Center for Psychology in the Schools and Education
American Psychological Association

Joyce VanTassel-Baska
Professor Emeritus
College of William and Mary

Participants

Cheryll Adams
Professor Emeritus
Ball State University

Susan Assouline
Professor & Associate Director
Belin-Blank Center for Gifted & Talented Education, University of Iowa

Katie Augustyn
Connecticut Association for the Gifted

Jennifer Carney
Director of Program Evaluation
Jack Kent Cooke Foundation

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College of William and Mary

Jane Clarenbach
Director of Public Education
National Association for Gifted Children

Rebecca Cullen
Program Manager,
Young Scholars Program
Jack Kent Cooke Foundation

Darlene Dockery
College of William and Mary

Emmalie Dropkin
National Head Start Association

Daniela Fairchild
Thomas B. Fordham Institute

Monique Felder
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Kim Hymes
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Council for Exceptional Children

Natalie Jansorn
Program Manager, Grants
Jack Kent Cooke Foundation

Jennifer Job
Frank Porter Graham Child Development Institute, University of North Carolina at Chapel Hill

Patricia Johnson
Team Leader, Mathematics & Science Partnership, U.S. Department of Education

Bianka Kortlan-Cox
Connecticut Association for the Gifted

Jacquelin Medina
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Colorado Department of Education

Sidney Moon
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Endnotes

1. Like any large social construct, defining poverty is difficult and complex. Poverty can be defined in purely economic terms via levels of family income. However, many scholars who study poverty define it more broadly and suggest that it means lacking not only material assets but also information, education, social belonging, power, and cultural capital and view poverty as a dynamic, social process rather than a categorical description. The term low-income in education research typically references a student's eligibility for the federal free and reduced-price lunch program. For the purposes in this paper, low-income embraces the education research term as well as a broad concept of poverty, particularly as it impacts the lives of students and families.
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