



# POLICY NOTES

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OF THE NEARLY 100,000 STUDENTS WHO SCORE ABOVE 1300 ON THE SAT EACH YEAR, AROUND 4,000 ARE AFRICAN AMERICAN OR HISPANIC. ADDING JUST 400 STUDENTS TO THIS POOL OF TOP TEST TAKERS — A 10 PERCENT INCREASE — WOULD BE AN IMPORTANT FIRST STEP TOWARD PLUGGING THE LEAKS IN THE PIPELINE AND ENSURING THAT MORE STUDENTS FROM MINORITY AND UNDERREPRESENTED BACKGROUNDS JOIN THE RANKS OF THE HIGHEST ACHIEVERS. **THESE YOUNG PEOPLE ARE OUR FUTURE LEADERS — WE OWE IT TO THEM AND TO THE FUTURE OF OUR SOCIETY TO INVEST IN THEIR DEVELOPMENT.**

—STEPHANIE BELL-ROSE, PRESIDENT, THE GOLDMAN SACHS FOUNDATION

## Addressing Achievement Gaps: *Leading the Challenge of Developing High-Potential Youth*

Citing national, international, and moral imperatives, educational leaders at a recent symposium co-sponsored by The Goldman Sachs Foundation and ETS issued a call to tap into the nation's pool of talented minority youth. ETS President Kurt Landgraf commented that the creation of a new underclass, as expressed in the gap in achievement between the majority White population and the growing minority population, places the foundation of our democracy at risk. He called for changes in the way that states finance K-12 education; for enhanced incentives for teachers to reach students in high-risk,



*Listening.  
Learning.  
Leading.*

THIS ISSUE — *DEVELOPING HIGH-POTENTIAL YOUTH* — HIGHLIGHTS FROM AN ACHIEVEMENT GAP SYMPOSIUM SPONSORED BY THE GOLDMAN SACHS FOUNDATION AND ETS.

For the more than 225 participants gathered at this recent ETS Achievement Gap Symposium, the issue was how to keep talented minority students in the academic pipeline that leads into the nation's selective colleges and universities. Although achievement gap discussions usually concentrate on those students performing at unacceptably low levels, the K-12 population also includes high-performing minority students. These talented students face steep barriers to success that often stem from their socioeconomic status. The barriers can be overcome by programs that identify, mentor, and nurture, giving these

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high-poverty schools; and for more pre-school programs to jump-start young minds.

College Board President Gaston Caperton reminded the audience that a strong educational system is what made the United States great, and that system must continue to be nurtured with resources and resolve if we are to compete with strong educational systems abroad, such as those in China and Russia. Education in this country must never become merely a “tarnished relic.”

As a society, we must pay more attention to

high-achieving students with underdeveloped potential, stated Edmund Gordon, the Richard March Hoe Professor Emeritus of Psychology and Education and Director of the Institute of Urban and Minority

Education at Teachers College of Columbia University. Although achievement gaps at the lower end of the test score distribution are most often the focus of national and local attention, the gap is actually larger at the high end of the distribution, according to Gordon. That translates into an overprediction problem, where able minority students do not perform as well as expected once they arrive at challenging college environments. Depressants on achievement are partly a result of racism and classism, but they also result from factors identified by research as “stereotype threat”<sup>1</sup> and the progressive

diminution of one’s sense of security as one progresses along the education pipeline.

The United States still struggles with segregation, commented Lee Bollinger, President of Columbia University. He noted, for example, that the Detroit metropolitan area is currently the most segregated city in the country (Detroit is more segregated now than it was in the 1960s), and that segregated, low-income communities limit potential in education and in life for their students, jeopardize their chances for good jobs,

and deny them the exhilaration of stretching their minds. However, American history and principles dictate that educational excellence should not be the province only of the advantaged. For the comparatively few minority students who defy

the odds and are admitted to selective institutions, the challenges continue, and the institutions themselves have a great responsibility to ensure that the high-ability students they accept live up to their potential.

Balancing the concepts of privilege and opportunity, Provost Earl Lewis of Emory University joined Bollinger in stressing the importance of assembling a diverse student body and building leadership skills among minority students. He encouraged college admissions committees to expand ways to assess applicant

**THE ACHIEVEMENT GAP THAT EXISTS IN AMERICAN EDUCATION IS NOT A GAP IN ABILITY, BUT A GAP IN RESOURCES AND A GAP IN EXPECTATIONS. WE KNOW THAT STUDENTS FROM ALL BACKGROUNDS CAN SUCCEED AT THE HIGHEST LEVELS OF EDUCATION, WHEN THEY ARE GIVEN THE SUPPORT THEY NEED TO SUCCEED — THE SUPPORT THAT IS REGULARLY GIVEN TO THE STUDENTS FROM THE TOP INCOME BRACKETS.**

**— LEE BOLLINGER, PRESIDENT, COLUMBIA UNIVERSITY**

<sup>1</sup> Coined by Claude Steele, the term has been applied in connection with poor academic performance of women and racial or ethnic minorities when these groups are confronted with negative stereotypes about their groups.

achievement by including noncognitive measures such as persistence, judgment, creativity, and motivation. Lewis also described a model at Emory that takes advantage of a historical relationship between Emory and Oxford College, the two-year institution embedded within Emory. Oxford College has a more diverse student body and lower test scores than Emory, but the students who graduate from Oxford College are guaranteed admission to Emory, and they often go on to be among Emory's best students. Of those students, 96 percent graduate from Emory, often within the top 3 percent of their class.

Loyiso Nongxa, Vice Chancellor and Principal of the University of the Witwatersrand in South Africa, addressed the tension between privilege and opportunity on the African continent. He questioned whether U.S. strategies could work in resource-constrained South Africa, which is engaged in a transformation agenda to overcome the effects of 350 years of apartheid. Further complications ensue because 85 percent of African educational leaders were trained abroad: As a result, they themselves have a poor understanding of the educational situation in their home countries and are prone to proposing unworkable solutions that fail to recognize these realities. In South Africa, the twin goals of the higher education system are *redress* (making amends for past practices) and *massification* (expanding educational opportunities for all citizens). Nongxa agreed with his American colleagues that academic support programs should start earlier in a student's schooling.

Stephanie Bell-Rose, President and Managing Director of The Goldman Sachs Foundation (GSF), summarized the focus of the foundation's activities and support for high-potential youth through the Signature Initiative and the Next

Generation Venture Fund. Talented youngsters from underrepresented backgrounds are an underdeveloped resource, said Bell-Rose.

Of the nearly 100,000 students who score above 1300 on the SAT each year, around 4,000 are African American or Hispanic. Adding just 400 students to this pool of top test-takers — a 10 percent increase — would be an important first step toward plugging the leaks in the pipeline and ensuring that more students from minority and underrepresented backgrounds join the ranks of the highest achievers. This is especially important since many of those students come from the fastest-growing segments of the country's population. Consequently, future African American and Latino leaders are being lost even as their share of the population is expanding. In conclusion, Bell-Rose noted that these young people are our future leaders — and that we owe it to them and to the future of society to invest in their development.

The GSF's Signature Initiative focuses its support on talented youth from those underrepresented populations by working with nonprofit groups that reach hundreds of students of color across the country. The organization's customized programs offer the resources, knowledge, and support that allow the students to succeed. The multiyear developmental process is designed to plug pipeline leaks by creating a larger cadre of students who are on track to attend competitive colleges and succeed in demanding careers. Goldman Sachs professionals lend their expertise by serving as mentors, coaches, and advisors to students in the programs. The core Signature Initiative programs include the Center for Talented Youth at The Johns Hopkins University, the New York Metro Region Leadership Academy at Prep for Prep, I-LEAD at Bank Street College of Education, and A Better Chance.

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students the guidance, academic support, and horizon-broadening experiences that middle-class students enjoy. The Goldman Sachs Foundation (GSF), a global philanthropy, supports a number of these programs in the United States and abroad.

The fourth in a series of ETS symposia focusing on achievement gaps, *Developing High-Potential Youth* was coordinated by Michael T. Nettles, Senior Vice President of the Policy Evaluation and Research Center (PERC) at ETS, and Catherine T. Millett, ETS Research Scientist in PERC. Over the past five years, Nettles and Millett have been working with The Goldman Sachs Foundation to evaluate its Signature Initiative programs.

Reports from the eight outreach and support programs funded by The GSF were featured at the Nov. 29-30, 2005 symposium, and they are discussed here. The full symposium agenda included the following topics:

- Leading the Challenge of Developing High-Potential Youth
- Diversifying and Enriching the Admissions Pool
- Expanding Opportunities for High-Potential Youth in Public Schools
- Intellectual Security and the Quiet Crisis
- Balancing Privilege and Opportunity: An Academic Leadership Perspective
- Colleges and Universities in Action
- A Look at ETS and College Board Research
- Paving the Way, Achieving Success: Developing High-Potential Youth
- Investment Opportunities for Developing High-Potential Youth

A limited number of DVDs of the symposium will be available. Contact [PIC@ets.org](mailto:PIC@ets.org) with requests.

The Next Generation Venture Fund, a GSF collaborative effort implemented by the Center for Talented Youth at The Johns Hopkins University, the Duke Talent Identification Program, and the National Foundation for Teaching Entrepreneurship, provides opportunities for its various corporate sponsors to tailor the program to their unique competencies. The fund:

- targets eighth-graders and builds a positive peer culture and social network that encourages and supports high achievement
- provides exposure to college learning through summer programs on campus and via distance learning throughout the year
- connects students with supportive sponsors who can broaden student horizons and promote their development
- offers counseling and assistance to students and their families in the college-application process, and provides coaching and mentoring by business executives and college students

Bell-Rose concluded by noting that conferences such as this one help to advance collaboration across sectors and organizations (nonprofits, universities, schools, corporations, foundations) to build supportive, efficient, and resourceful networks.

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## Preparing Students in Public Schools to Meet Rigorous Admissions Standards at Selective Institutions

Senior administrators from public school districts in New Jersey, Texas, and Illinois described their challenges and how they are meeting them with mentoring programs, summer sessions, bridge programs, and by encouraging teachers to recruit promising students of color into the most demanding courses. The panel included Allan Alson (Evanston Township Public High School), Pat Forgione (Austin Independent School District), James “Torch” Lytle (Trenton Public Schools), and Laura Murray (Homewood-Flossmoor School District).

To set the context for admissions standards at competitive institutions, a panel of admissions and financial aid professionals from Claremont McKenna College (Georgette DeVeres), Goucher College (Roberto Noya), University of Michigan (Ted Spencer), and University of Pennsylvania (Lee Stetson) outlined their respective application and admissions processes. A lively question and answer session provided further insight into the challenges faced by high-potential minority youth as they prepare themselves for applying to selective institutions.

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## Colleges and Universities in Action

Eager to recruit and retain academically talented students, leading universities across the globe

### INVESTMENT OPPORTUNITIES FOR DEVELOPING HIGH-POTENTIAL YOUTH

When asked what they were looking for in funding proposals, representatives of the Altman Foundation, Time Warner Incorporated, The Andrew W. Mellon Foundation, and the Jack Kent Cooke Foundation listed the following:

- Complete, in-depth program descriptions
- Detailed finances
- Concrete plans (not just a mission statement)
- Data-driven evaluation plans
- Ripple effects
- Passion; long-term support
- Willingness to tap alumni
- Assessments
- Affordability and replicability
- Appropriate and sufficient staff

have been looking for and finding talent in their own backyards. Many universities are located in urban centers with large minority populations that are often underserved. Representatives of four campus-based initiatives that identify, recruit, and mentor local high-potential youth gave overviews of their programs.

Leading off with an international perspective, Catherine Baldwin of the London School of Economics and Political Science (LSE) described the British government's goal of increasing higher education enrollment to 50 percent of 18- to 30-year-olds. To recruit underrepresented groups into higher education, LSE offers a Widening Participation initiative, funded by GSF, other foundations, and the Higher Education Funding Council. Baldwin serves as the head of recruitment and admissions for the program. The initiative is made up of 12 programs that seek to raise the aspirations of low-income, minority, first-generation students and encourage them to think about pursuing higher education.

A new program also works with high-potential youth to facilitate their preparation for and admission to the Russell Group, a set of highly selective United Kingdom universities not unlike the American Ivy League. Components of the programs, aimed at primary and secondary school students, include student tutoring, student ambassadors, transitional sessions for primary students moving to secondary school, national mentoring, summer schools, organized visits to LSE, school/college workshops, student shadowing, and LSE public lectures and information sessions. Also fundamental to the program are Aiming for College (ACE) days, offered to ninth- to 11th-grade students to start them thinking about university life and the opportunities available in higher education.



ACE half-day sessions also focus on financial responsibilities, various avenues to higher education, development of research skills, and finding ways to balance work and social life. For more information, visit [www.lse.ac.uk/studentrecruitment](http://www.lse.ac.uk/studentrecruitment).

Jason Klugman returned audience attention to the United States with his description of the Princeton University Preparatory Program (PUPP). Klugman is the program's coordinator. Starting in the ninth grade, PUPP makes a three-year commitment to selected high-achieving, low-income students from neighboring New Jersey high schools in Trenton, Ewing, and Princeton. The selection process starts with the schools identifying students who meet the criteria (scoring over 200 on the Grade Eight Proficiency Assessment, earning a high grade point average, and a family income under \$51,000); students then take a writing exam and participate in group interviews. Those selected become part of PUPP, which seeks to prepare them to be viable candidates for success in highly selective colleges and universities.

PUPP offers a six-week summer institute and school-year activities, including mentoring, tutoring, and cultural excursions. The summer institute provides a combination of traditional and project-based studies of writing, literature, mathematics, and science, as well as focused work in music,

art, and art appreciation. Developing leadership and communication skills is also an integral part of the GSF-supported program, as PUPP students are encouraged to think critically and deeply about problems and issues. During the school year, PUPP works closely with students in their schools through monthly cohort meetings and a coordinated academic enrichment program implemented by graduate students from Princeton University. For more information, visit [www.princeton.edu/teacher/PUPP](http://www.princeton.edu/teacher/PUPP).

As outlined by associate director Mecca Brooks, the University of Chicago's Collegiate Scholars Program for high-performing students from Chicago Public Schools offers classes and enrichment seminars led by University of Chicago (UC) faculty. Like each of the GSF-supported programs featured here, the goal in Chicago is to prepare talented students for academic success at the best colleges and universities. Each year, 50 Collegiate Scholars are chosen.

Founders of the UC program recognized a number of factors that may possibly contribute to the low percentage of high-achieving Chicago Public School students who attend "most competitive" or "highly competitive" universities. Among these factors are lack of a rigorous high school curriculum, a dearth of college-preparatory activities, rare opportunities for

### MAJOR CHALLENGES FACING PROGRAMS THAT DEVELOP HIGH-POTENTIAL YOUTH

- Maintaining high standards while seeking to grow as a selective program
- Having to eliminate students from the program for reasons (usually family) beyond their control
- Adding more university partners
- Promoting a new definition of merit to include motivation, aspirations, leadership, and communication skills
- Working against a widespread negative attitude toward smart people
- Getting students to take ownership of their education (getting them to do it for themselves, not for others)

exposure to highly competitive universities, and financial constraints.

Recognizing these factors, UC faculty created a program to focus both on advanced academics and college prep. Each summer, the Collegiate Scholars take courses taught by UC faculty in physical sciences, humanities, life sciences, and social sciences. During the school year, the scholars participate in a series of Saturday workshops and SAT test-preparation activities. Coursework and enrichment activities are designed to help students learn to communicate clearly and effectively, improve mathematical reasoning, and develop an effective approach to textual analysis. Members of the UC faculty not only teach classes and seminars, but also serve as mentors and advisors as the students advance through the program. For more information, visit [www.collegeadmissions.uchicago.edu](http://www.collegeadmissions.uchicago.edu).

Each year, the Crimson Summer Academy program at Harvard University selects 30 Crimson Scholars from high schools in Boston and Cambridge, explained Maxine Rodburg, the program's director. Academically-talented public and parochial school ninth-graders from Boston and Cambridge are nominated by a principal, teacher, or guidance counselor familiar with their academic and personal potential; students must come from financially disadvantaged backgrounds. Those selected join a three-year program centered on summer academies that focus on citizenship in the 21st century and, more specifically, on what it means to be a responsible American in an interconnected world. Commitment to the Crimson Summer Academy comes directly from the Harvard president's office. The GSF-funded academy was started in the

summer of 2004 as part of a Harvard initiative to increase access to top colleges for low-income students. For the first two summers, the students, who are mostly Hispanic and African American, take an integrated curriculum and live on campus from Sunday to Friday. In the third year, they take courses at Harvard Summer School, receiving college credits. They also receive a \$3,000 college scholarship. The program has a retention rate of 100 percent. For more information, visit [www.crimsonsummer.harvard.edu](http://www.crimsonsummer.harvard.edu).

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## **Paving the Way for High-Potential Youth to Achieve Success**

In addition to the college-based programs described in this newsletter, the audience heard from representatives of four innovative school-based programs supported by The Goldman Sachs Foundation. The representatives gave overviews of their varied approaches to meeting the common goal of identifying and mentoring talented youth from low-socioeconomic groups to prepare them for admission to selective colleges.

Deborah Bial, president and founder of the Posse Foundation, spoke of the genesis of the foundation in a remark made by a student who said he never would have dropped out of college if he had had his "posse" with him. The program identifies, recruits, and selects student leaders from public high schools and sends them in groups called Posses to top colleges and universities. A multicultural team of 10 students, the Posse, acts as a traveling support system to ensure that each Posse Scholar graduates from college.

Through an intensive eight-month Pre-Collegiate Training Program during their senior year in high school, the team members are prepared for enrollment at top-tier universities nationwide. They pursue academic excellence and help promote cross-cultural communication on campus. Scholars receive four-year, full-tuition leadership scholarships from Posse Foundation partner colleges and universities, of which there are currently 24.

Since 1989, the Posse Foundation has placed 1,228 students into selective colleges and universities. Those students show persistence and graduate at a rate of 90 percent — higher than the national average for students at all institutions of higher education. They have won \$112 million in leadership scholarships. The foundation's program sites are in five major cities across the United States: Boston, Chicago, Los Angeles, New York, and Washington, D.C. For more information, visit [www.possefoundation.org](http://www.possefoundation.org).

As described by Director of Admissions Karen Bond, the Center for Talented Youth (CTY) at The Johns Hopkins University has a 25-year history with a steadfast mission: to seek talented youth and help them find their place in higher education. The oldest talent-identification program in the country, it currently serves 80,000 students. Through its Talent Search, CTY identifies students of the highest academic ability in grades 2 through 8 and offers them challenging educational opportunities through grade 10 that develop the intellect, encourage achievement, and nurture social development.

Students who score at or above the 95th percentile on standardized tests normally taken in school are invited to participate in the program's talent search, during which they take

an additional set of standardized tests used to measure mathematical and verbal reasoning. To help the students and their families set the highest goals for these talented youth, CTY offers residential academic programs over the summer at colleges and universities across the nation, special topic conferences, online courses, and a periodical that provides information about opportunities and resources for gifted students.

During the three-week summer programs, students take a single course selected from a range of liberal arts disciplines, including language, history, writing, the arts, mathematics, and science. All courses are rigorous and are taught above grade level. This intense immersion in a subject has proven to be challenging and stimulating for students of high ability. In addition to the coursework, students enjoy a rich experience outside of the classroom, living on campus under the supervision of resident assistants and participating in a variety of activities. For more information, visit [www.cty.jhu.edu](http://www.cty.jhu.edu).

Aileen Hefferren, Chief Executive of Prep for Prep, described the New York City program's mission to identify talented students from minority-group backgrounds, prepare them for placement in independent schools, and provide them with a sense of community, peer support, critical post-placement services, and a range of leadership-development opportunities. The program was founded in 1978.

In a typical year, more than 3,500 students of color with strong academic ability (nominated by over 500 New York City public elementary and junior high schools) participate in the talent search. The selection process results in approximately 150 fifth-graders being admitted into Prep for Prep, and 60 seventh-graders



admitted into PREP 9. The fifth-graders are placed in New York City day schools, and the seventh-graders are placed in boarding schools throughout the Northeast. A rigorous 14-month course of study (known by Prep for Prep participants as “academic boot camp”) spans two intensive seven-week summer sessions as well as after-school Wednesday and all-day Saturday classes during the intervening school year.

Typically, 75 percent of admitted students complete the boot camp, and all students who successfully do so are placed in independent schools, where in addition to challenging academics, they have access to travel abroad, counseling, campus visits, and summer jobs. From there, they prepare for admittance into top colleges and universities.

Overall, 40 percent of Prep for Prep’s college graduates have earned their degrees from Ivy League institutions, while 92 percent have graduated from colleges characterized as “most competitive” or “highly competitive.” For more information, visit [www.prepforprep.org](http://www.prepforprep.org).

### WISH LIST

When I-LEAD, CTY, Prep for Prep, and Posse Foundation representatives were asked what they would wish for, they responded:

- An endowment, so that we can focus on the program and not have to fundraise
- Ways to reach more children
- More partnerships with school systems across the country
- Ways to show kids that it’s okay to be smart
- A chance to continue having forums like this one, to make our voices loud and strong in support of talented minority youth

The Bank Street College of Education is the site of the Institute for Leadership, Excellence, and Academic Development (I-LEAD), which works with students from six inner-city Catholic high schools in the Bronx and Harlem to prepare them for admission to selective colleges and universities. Richard Rivera, I-LEAD director, described the 6-year-old program, which serves more than 190 students and boasts 83 alumni who are enrolled in their first and second year of college.

I-LEAD is a 3½-year leadership and college-preparation program for students selected from the program’s six participating schools. Each school invites up to 30 of their most highly motivated students to apply. Starting at the end of the students’ ninth-grade year, I-LEAD provides enrichment courses, summer institutes at local colleges, study abroad opportunities, and leadership development.

The program is organized into cohorts, which push and promote group responsibility, accountability, and support for each other. The class advisor assigned to a cohort in ninth grade stays with the group through graduation, serving as a safety net, mentor, and coach. I-LEAD students say that the relationship with their advisor is what they value most about the program.

Students participate in Saturday academies, test-preparation sessions, and college tours. The program emphasizes the importance of summer abroad and community service projects, as well as summer programs. I-LEAD assists students with the college selection and application processes, helps them develop interviewing skills, and assists them with completing their financial aid paperwork. With a core support system, I-LEAD challenges its students to succeed both academically and socially. For more information, visit [www.bankstreet.edu/ileadgs](http://www.bankstreet.edu/ileadgs).

## Intellectual Security and the Quiet Crisis — an Address by Shirley Ann Jackson

Educational leaders attending the conference frequently cited compelling national reasons to educate high-performing minority students and help them succeed. None, however, characterized this challenge as boldly as Shirley Ann Jackson, President of Rensselaer Polytechnic Institute (Troy, New York), in her address, “Intellectual Security and the Quiet Crisis.”

Detailing converging trends affecting the supply of trained scientists and engineers, she pointed to a decrease in the flow of international students, scientists, and engineers to the United States, and an inadequate domestic science and engineering pipeline that will be unable to compensate for the future absence of these foreign-born engineers and scientists, and incapable of dealing with an imminent wave of retirements.

According to Jackson, intellectual security will be compromised if the United States does not look to its own “new majority” of women and minorities to fill the pipeline: They now constitute two-thirds of the U.S. population. While other countries such as China, Korea, Japan, Taiwan, Singapore, and Hong Kong are increasing the number of their engineering graduates, the numbers are declining in the United States. Together, these countries produce approximately 700,000 engineers annually; the United States graduates only 60,000.

As a nation, the United States stands to lose its ability to compete, to be a global leader, and to innovate. In discussing this concern, Jackson referred to the Council on Competitiveness, which has stated the following as part of its National Innovation Initiative:

- Innovation fosters the new ideas, technologies, and processes that lead to better jobs, higher wages, and a higher standard of living. ***For advanced industrial nations no longer able to compete on cost, the capacity to innovate is the most critical element in sustaining competitiveness.***
- The United States stands apart from the rest of the world in its record of sustained innovation over decades, across industries, and through economic cycles.

**NEW TECHNOLOGY REQUIRES DIVERSE, DISCIPLINED, COMMITTED INDIVIDUALS WHO CHALLENGE EACH OTHER AND WHO ARE DRAWN FROM A COMPLETE TALENT POOL. WE NEED A NATIONAL CONVERSATION, A NATIONAL STRATEGY, AND THE NATIONAL WILL TO IDENTIFY, SELECT, AND NURTURE TALENTED YOUNG PEOPLE IN THE STEM FIELDS (SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS).**

—SHIRLEY ANN JACKSON, PRESIDENT,  
RENSSELAER POLYTECHNIC INSTITUTE

- But the United States now finds itself at a potential inflection point — facing new realities that pose significant challenges to its global innovation leadership.<sup>2</sup>

On the national security front, said Jackson, the U.S. Department of Defense must fill vacant STEM (science, technology, engineering, and mathematics) positions with qualified U.S. citizens — and these are becoming increasingly difficult to find. Recognizing the importance of science and engineering in creating a platform for change to address global issues such as the bird flu pandemic is essential. Recent reports highlighting the need for more U.S. scientists and engineers have called for doubling the number of STEM graduates in the next 10 years and increasing the amount of money for basic research in physics and mathematics<sup>3</sup>.

Universities preparing the next generation of scientists and engineers must educate their students with an entrepreneurial method and produce individuals with strong analytic skills, multicultural understanding, and the intellectual agility to see connections where others have not.

Jackson cited efforts under way to build science and engineering talents within minority populations, as well as a series of recommendations that would:

- strengthen the skills of current math and science teachers

- attract more young people to careers as math and science teachers
- award four-year, merit-based scholarships to those pursuing degrees in math and science
- increase federal funding 10 percent over the next seven years for basic research
- institute a presidential innovation award.

Declaring that recognition can create powerful incentives for organizational change, she proposed that the federal government develop a national math and science award based on the model of the Baldrige National Quality program, which recognizes business, education, and health care organizations for their achievements in quality and performance.

Jackson returned at the end of her speech to the idea of convergence. She noted that she herself is a product of the confluence of two key factors in the 1950s: the 1954 *Brown v. Board of Education of Topeka, Kansas*, litigation outlawing school segregation and the 1957 launch by the Soviets of the Sputnik satellite, which triggered a national focus on science and engineering and sparked the Space Age. Jackson argued that, taken together, these two events started her on a path to high achievement. She also noted that, 50 years later, U.S. intellectual security is at stake. Jackson contended that we can promote a similar convergence today if, as a nation, we find the will to do so.

<sup>2</sup> [www.compete.org](http://www.compete.org)

<sup>3</sup> *Tapping America's Potential: The Education for Innovation Initiative*, published by the U.S. Chamber of Commerce (2005). Download at [http://www.uschamber.com/publications/reports/050727\\_tap.htm](http://www.uschamber.com/publications/reports/050727_tap.htm).  
*Rising above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future*, published by the National Academies Press (2005). Download at <http://books.nap.edu/catalog/11463.html>.

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