NMSI Overview

National Ocean Industries Association(NOIA)

2010 Fall Meeting

Gregg Fleisher
National Director
National Math and Science Initiative

National Math and Science Initiative

NMSI's Mission:

- The National Math and Science Initiative is an agent of change focused on addressing the national STEM crisis.

NMSI Approach:

- NMSI brings best practices in management to the education sector by taking proven programs with quantifiable results to national scale: APTIP, UTEACH, and Initiative for Military Families.
- Our programs impact both the existing and the future teacher cores.

Advanced Placement Training and Incentive Program

Advanced Placement Training and Incentive Program

The Advanced Placement Training and Incentive Program (APTIP) is a comprehensive approach that increases teacher effectiveness and student achievement through training, teacher and student support, vertical teaming, open enrollment, and incentives.

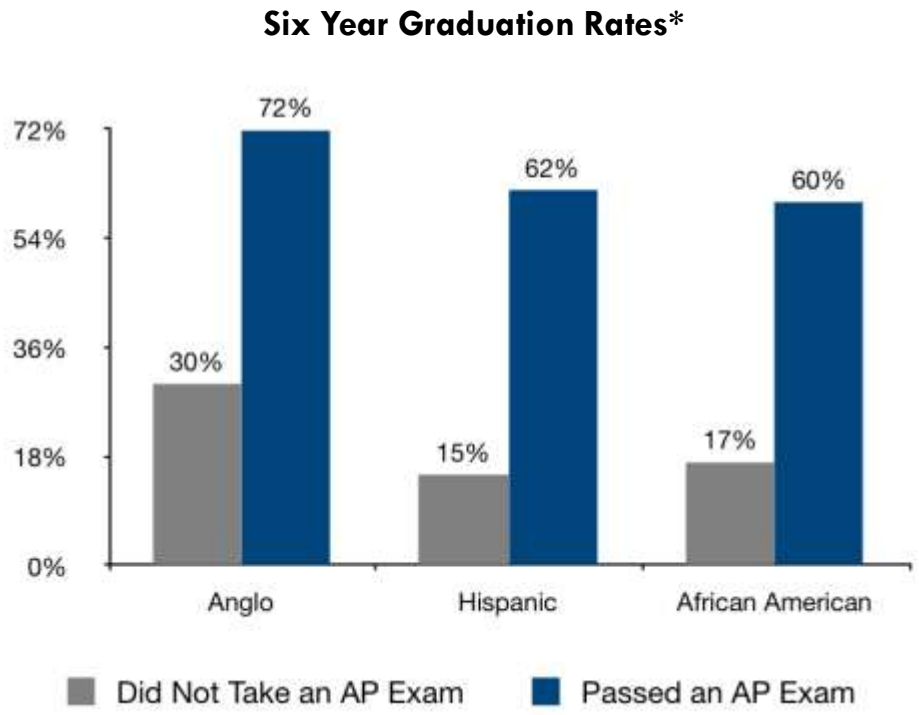
The program increases dramatically the number of students taking and passing AP math, science, and English exams, and expands access to traditionally under-represented students.

Elements of Success

APTIP expands access to rigorous college-level work and increases college graduation rates.

APTIP brings rigorous **college-level coursework** in math, science, and English to more students in public high schools.

Students who take and pass an AP exam are **more likely to graduate from college** than students who do not take an AP exam.*



*Source: National Center for Educational Accountability. Based on a study of 67,863 public high school students graduating in 1998, who enrolled in a Texas public college or university.

NMSI selected APTIP for national replication because it produces dramatic achievement gains in rigorous math and science courses.

Program Demand
In 2007, non-profits from 28 states applied to replicate the APTIP program. NMSI selected non-profit partners in six states for five-year funding and NMSI program management support.

Program Expansion
NMSI is replicating APTIP in **Alabama, Arkansas, Connecticut, Kentucky, Massachusetts, and Virginia.** To sustain long term improvement in math and science education in their public schools, NMSI's state affiliates have built extensive coalitions with strong support from leaders in business, state government, education, and their communities. NMSI is actively working to find partners to bring the APTIP program to **Colorado, Indiana, Michigan** and **Minnesota.**

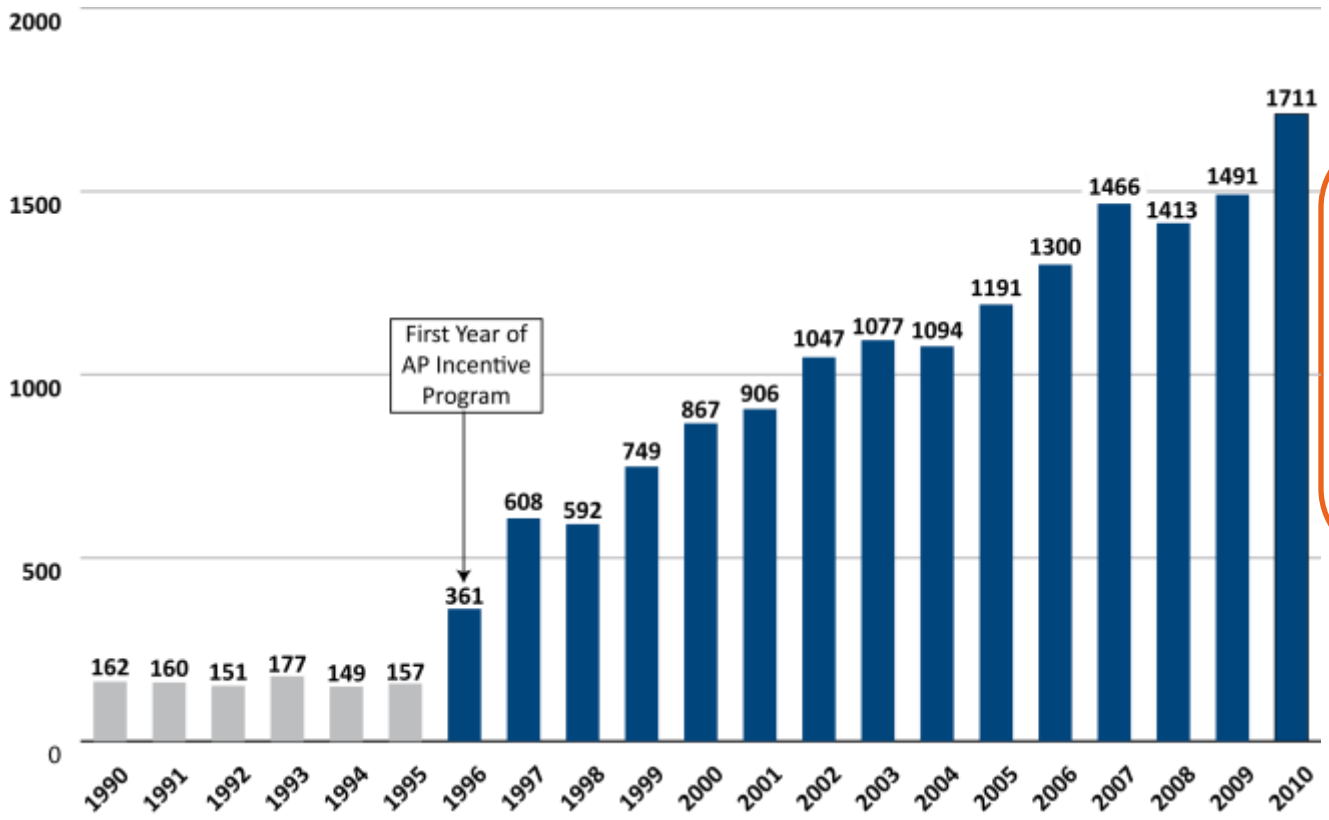
Program Implementation
Implementation began during the 2008 – 2009 school year and will expand to include a new cohort of public high schools each year over the five-year grant period. In 2008 – 2009, NMSI affiliates implemented the APTIP program in 67 public high schools. NMSI is currently implementing APTIP in **229 high schools** and plan to reach **350 high schools** by fall 2012.

If our NMSI high schools were a state, it would have the 33rd largest student enrollment and the 28th largest African American and Hispanic student enrollment.

APTIP has a significant track record of improving student achievement.

APTIP replicates a program that began in 10 Dallas ISD schools in 1996 and it continues to produced dramatic results.

AP exams **passed** in math, science, and English in 10 DISD incentive schools

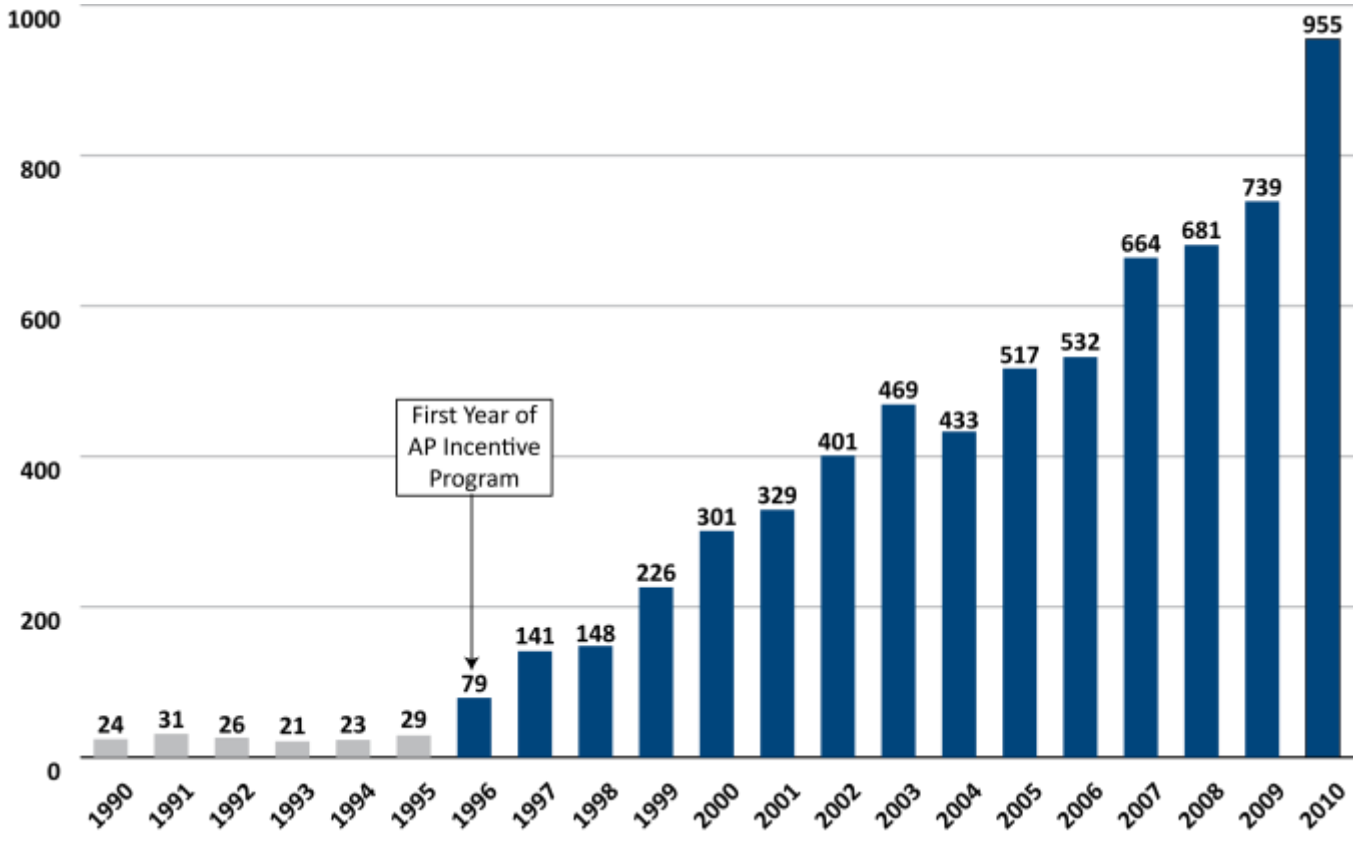


AP passing scores in math, science and English have **increased 11 times** in 15 years in participating DISD schools.

Source: The College Board

Increased African-American and Hispanic student achievement in the 10 DISD AP program schools.

AP exams **passed** by **African-American and Hispanic students** in math, science, and English in 10 Dallas ISD incentive schools



Minority passing scores are **33 times higher** in 15 years in the participating DISD schools.

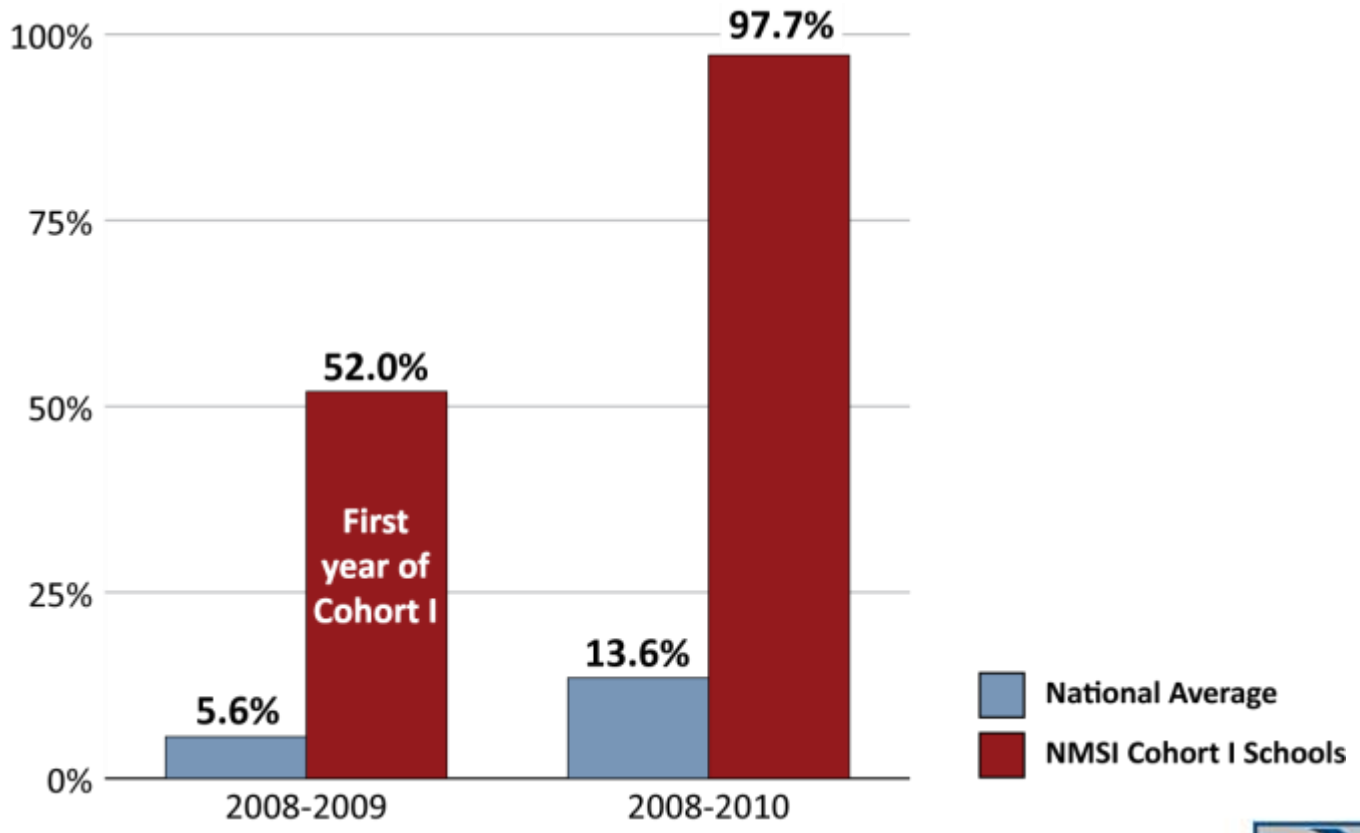
Source: The College Board

NATIONAL MATH + SCIENCE INITIATIVE

Results to Date

APTIP Results – Cohort I

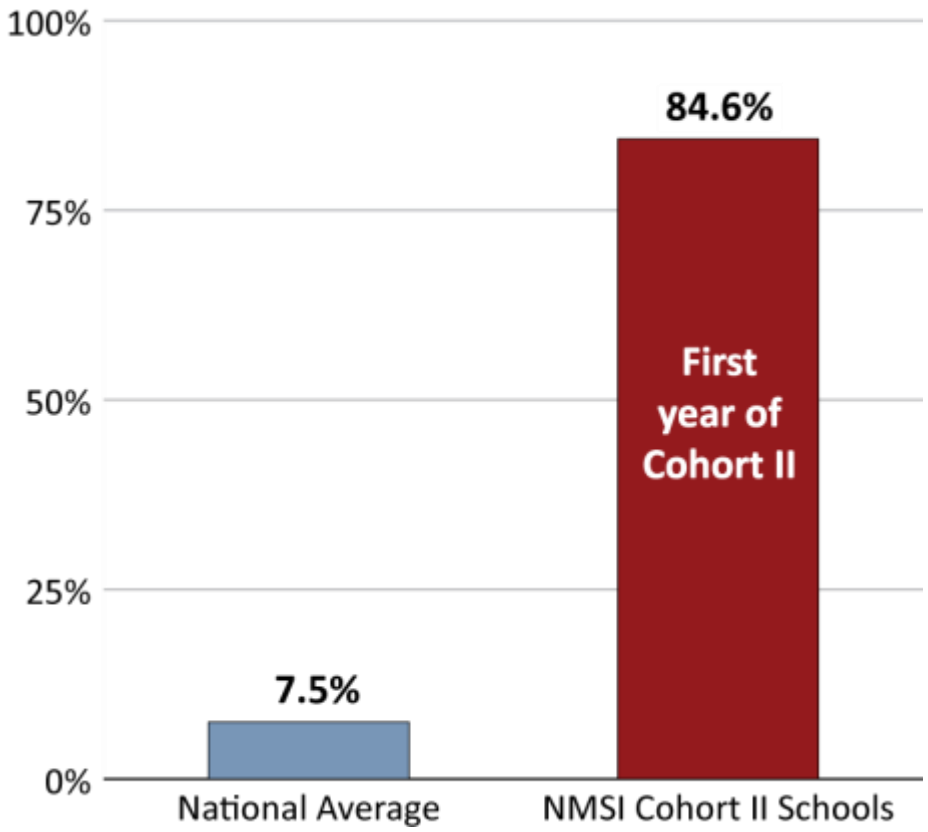
The **percent increase** in AP math, science and English exams **passed** in Cohort I of NMSI program schools is over seven times the national average.



Source: College Board. National average is for public schools only.
2009 results are for 67 Cohort I schools that participated from 2008-09. From 2009-10, there were 65 Cohort I schools that participated and they had a 53.5% increase in 2008-2009.
NMSI program schools are in Alabama, Arkansas, Connecticut, Kentucky, Massachusetts, and Virginia.

APTIP Results – Cohort II

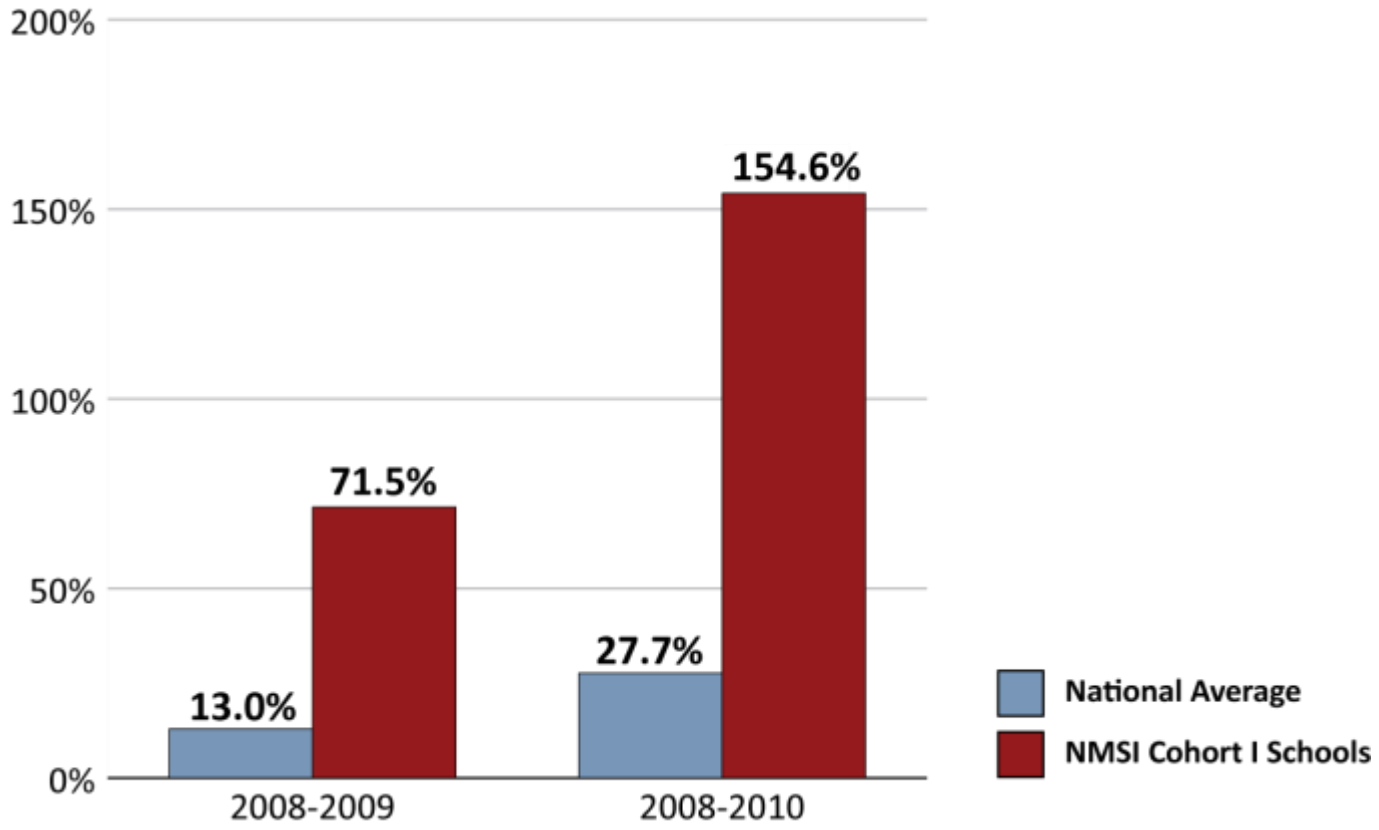
The **percent increase** in AP math, science and English exams **passed** in Cohort II of NMSI program schools is over 11 times the national average.



Source: College Board. National average is for public schools only.
Results are for 75 APTIP Cohort II schools in Alabama, Arkansas, Connecticut, Kentucky, Massachusetts, and Virginia.

APTIP African-American and Hispanic Results – Cohort I

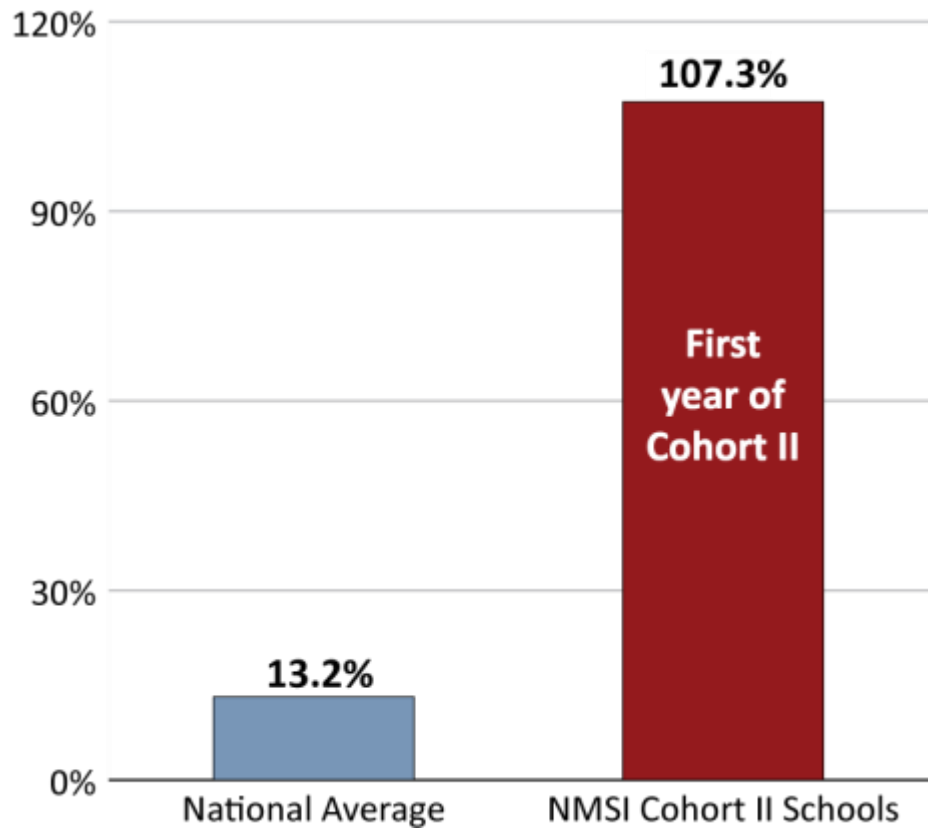
The **percent increase** in AP math, science and English exams **passed** by **African-American and Hispanic students** in Cohort I of NMSI program schools is over five times the national average.



Source: College Board. National average is for public schools only.
2009 results are for 67 Cohort I schools that participated from 2008-09. From 2009-10, there were 65 Cohort I schools that participated and they had a 76.8% increase in 2008-2009.
NMSI program schools are in Alabama, Arkansas, Connecticut, Kentucky, Massachusetts, and Virginia.

APTIP African-American and Hispanic Results – Cohort II

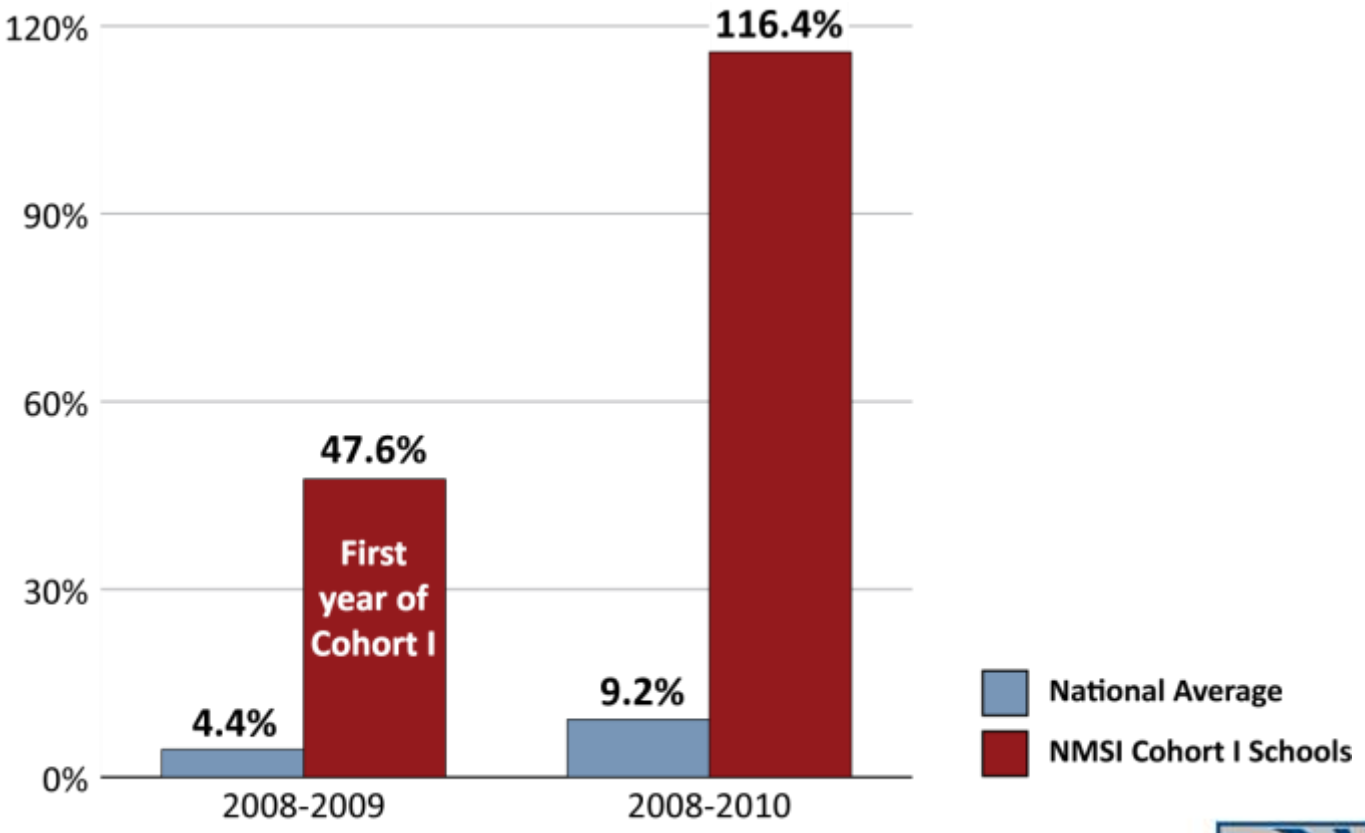
The **percent increase** in AP math, science and English exams **passed** by **African-American and Hispanic students** in Cohort II of NMSI program schools is over eight times the national average.



Source: College Board. National average is for public schools only.
Results are for 75 APTIP Cohort II schools in Alabama, Arkansas, Connecticut, Kentucky, Massachusetts, and Virginia.

APTIP Female Results – Cohort I

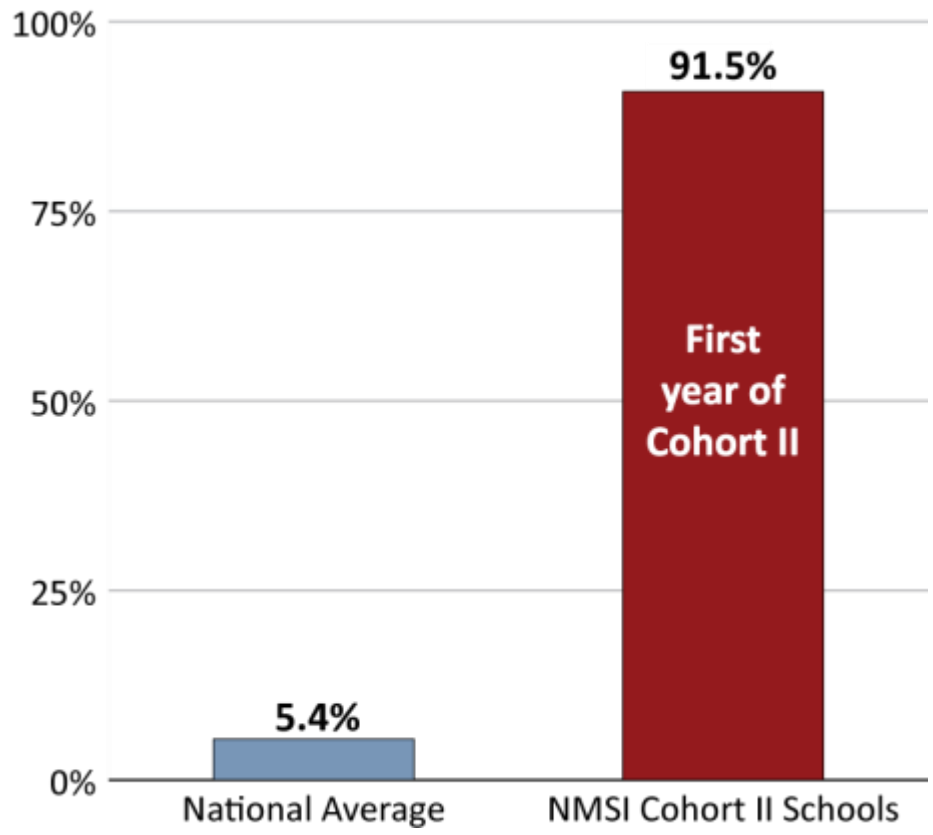
The **percent increase** in AP math and science exams **passed** by **female** students in Cohort I of NMSI program schools is over 12 times the national average.



Source: College Board. National average is for public schools only.
2009 results are for 67 Cohort I schools that participated from 2008-09. From 2009-10, there were 65 Cohort I schools that participated and they had a 76.8% increase in 2008-2009.
NMSI program schools are in Alabama, Arkansas, Connecticut, Kentucky, Massachusetts, and Virginia.

APTIP Female Results – Cohort II

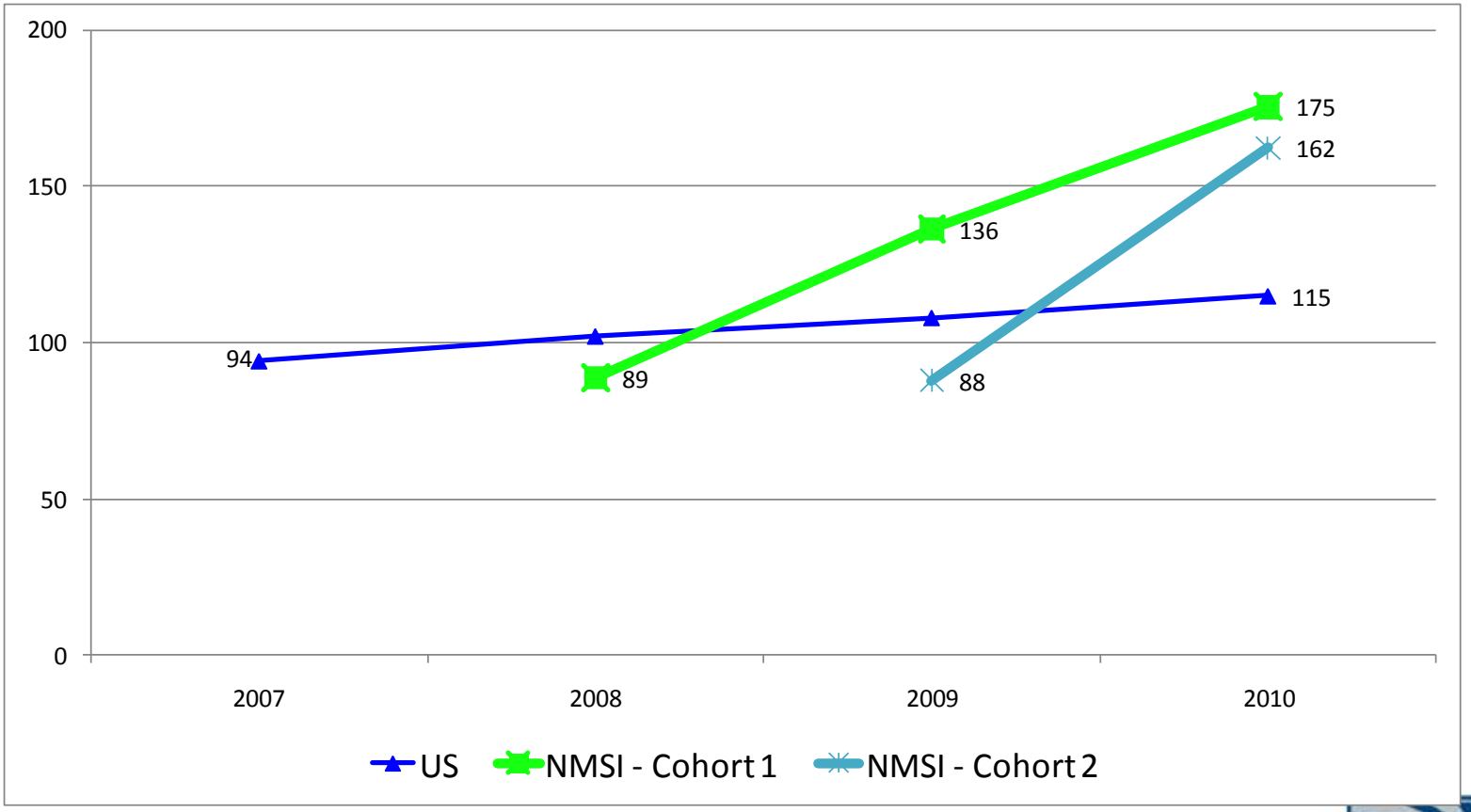
The **percent increase** in AP math and science exams **passed** by **female** students in Cohort II of NMSI program schools is almost 17 times the national average.



Source: College Board. National average is for public schools only.
Results are for 75 APTIP Cohort II schools in Alabama, Arkansas, Connecticut, Kentucky, Massachusetts, and Virginia.

NMSI schools soared above national average after APTIP implementation.

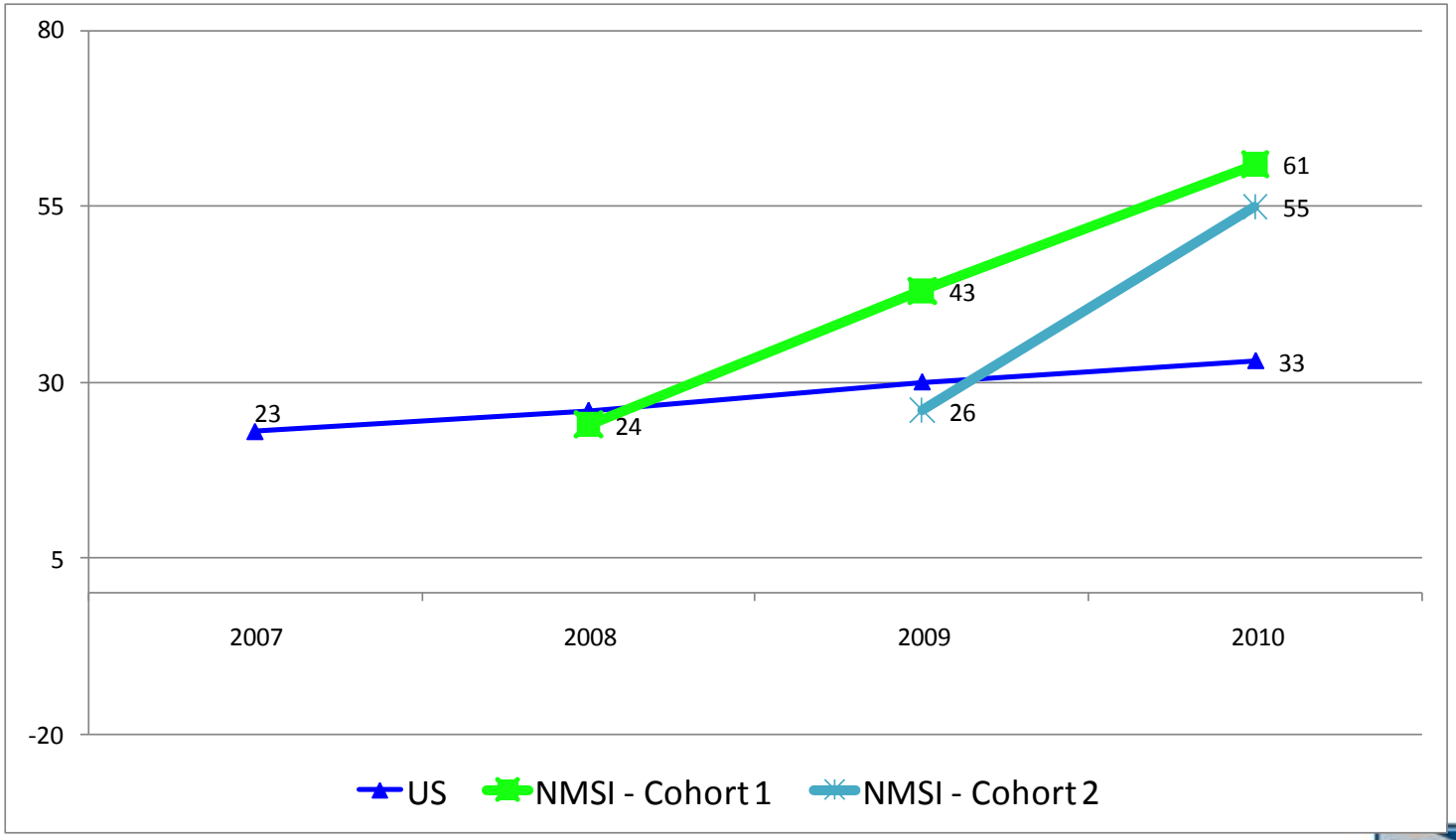
Scores of 3 or greater in math, science and English AP exams per 1,000 juniors and seniors enrolled in U.S. and NMSI schools



Source: College Board. National average is for public schools only.

APTIP is closing the African-American and Hispanic achievement gap.

Scores of 3 or greater in math, science and English AP exams for **African-American and Hispanic students** per 1,000 juniors and seniors enrolled in U.S. and NMSI schools



Source: College Board. National average is for public schools only.

UTEACH PROGRAM

Today's Focus: UTeach Program

NMSI's UTeach Program transforms the way universities prepare teachers. Developed at the University of Texas at Austin to transform the way colleges and universities recruit, prepare, and inspire new math and science teachers, this program recruits math and science undergraduate majors to pursue a teaching career.

The UTeach approach integrates instructional pedagogy with content knowledge, uses inquiry and project-based learning, implements induction support, administers rigorous instruction based on current research, provides intensive and early field experiences, and installs equity and assessment.

The UTeach program produces teachers that are confident and competent in their subject matter.

92 percent of UTeach graduates become teachers. *82 percent are still in the classroom* after five years, compared with fewer than 65% nationally.

UTeach Replication Sites

During the 2009-2010 school year, there were 3,046 students enrolled in the first cohort of universities replicating UTeach.

This fall, the UTeach program is being implemented at 22 universities and there are 3,901 students enrolled in the program across the country.

Universities implementing the UTeach program:

The University of Texas at Austin (1997)

First Cohort (2008)

- Florida State University
- Louisiana State University
- Northern Arizona University
- Temple University
- University of California, Berkley
- University of California, Irvine
- University of Colorado at Boulder
- University of Florida
- University of Houston
- University of Kansas
- University of North Texas
- University of Texas at Dallas
- Western Kentucky University

Second Cohort (2010)

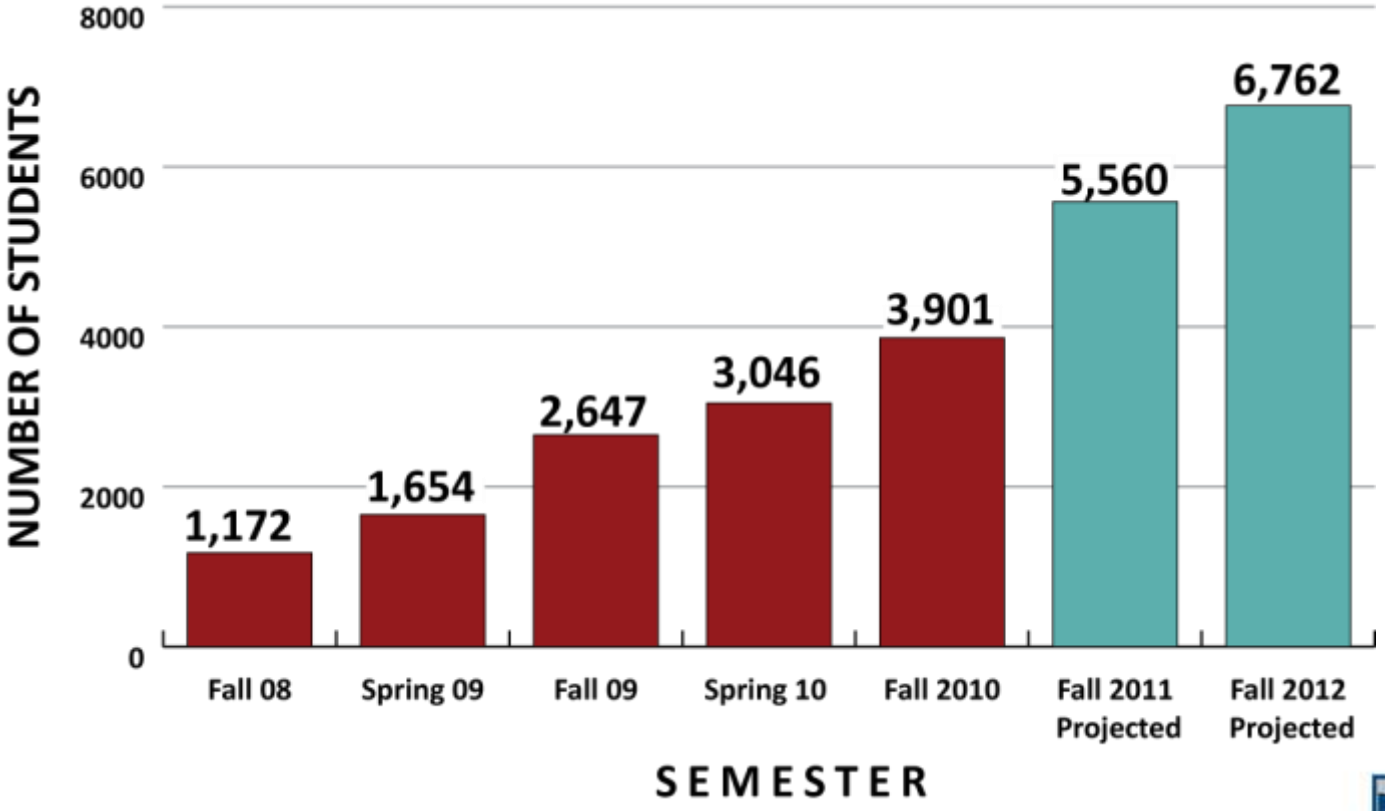
- Cleveland State
- University of Texas at Arlington
- University of Texas at Tyler
- University of Colorado at Colorado Springs
- Middle Tennessee State University
- University of Memphis
- University of Tennessee at Chattanooga
- University of Tennessee at Knoxville

UTeach Expansion and Enrollment

The expansion of UTeach to a second cohort of universities was announced by President Barack Obama on January 6, 2010.

"To bring more educators into the classroom, the National Math and Science Initiative is working with Texas Instruments and the Dell Foundation to prepare almost 5,000 new math and science teachers in the next five years -- through a program that allows young people to earn teaching certificates and science degrees at the same time."

-- President Barack Obama, January 6, 2010



*Fall 2010 enrollment and projected future enrollment numbers include the eight new universities in Cohort II.

UTeach Expansion and Results

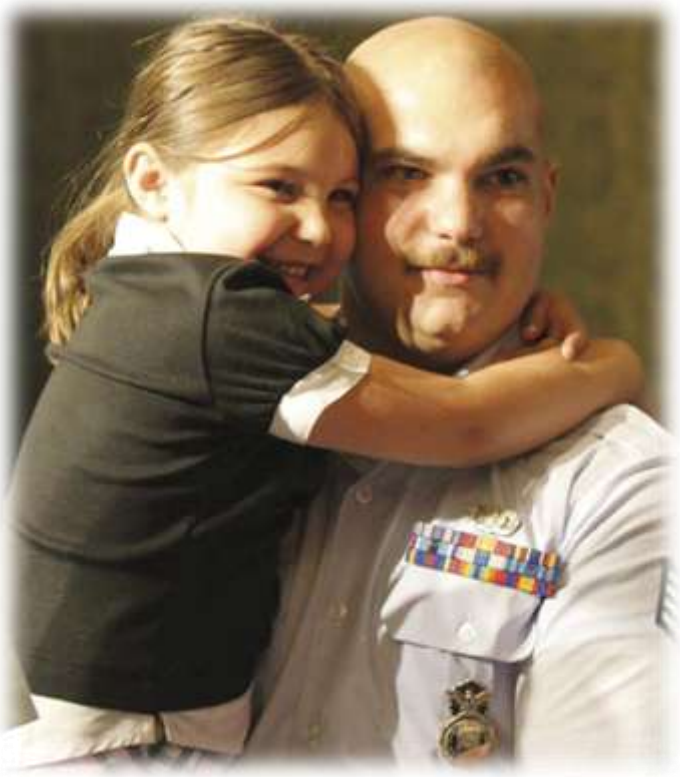
- NMSI university partners have enrolled over **3,500** math and science undergraduate majors in the UTeach Program as of Fall 2010.
- The 22 universities replicating UTeach will prepare over **4,500** talented math and science teachers by 2015 and **7,000** by 2018. The talented new STEM teachers will have an impact on more than **20 million** students over the course of their teaching careers.
- There are **more than 40 universities** on our waiting list who want to implement the UTeach program.

OTHER INITIATIVES

Initiative for Military Families

The Initiative for Military Families is the coming together of a great partnership by NMSI, the Military Child Education Coalition, and several corporations to support children in America's military families.

There are 160,000 young people in the U.S. who have a parent currently deployed, and at least a million children have had a parent deployed in the last eight years.



Initiative for Military Families

This public-private partnership addresses the national STEM need and helps military families by providing consistent high level STEM education in high schools serving military bases.

Through this initiative, NMSI's Advanced Placement Training and Incentive Program (APTIP) will be expanded to over 100 public high schools serving a high percentage of military families.

This fall, the program will be launched in four high schools, two serving Fort Campbell in Kentucky and two serving Fort Hood in Texas.

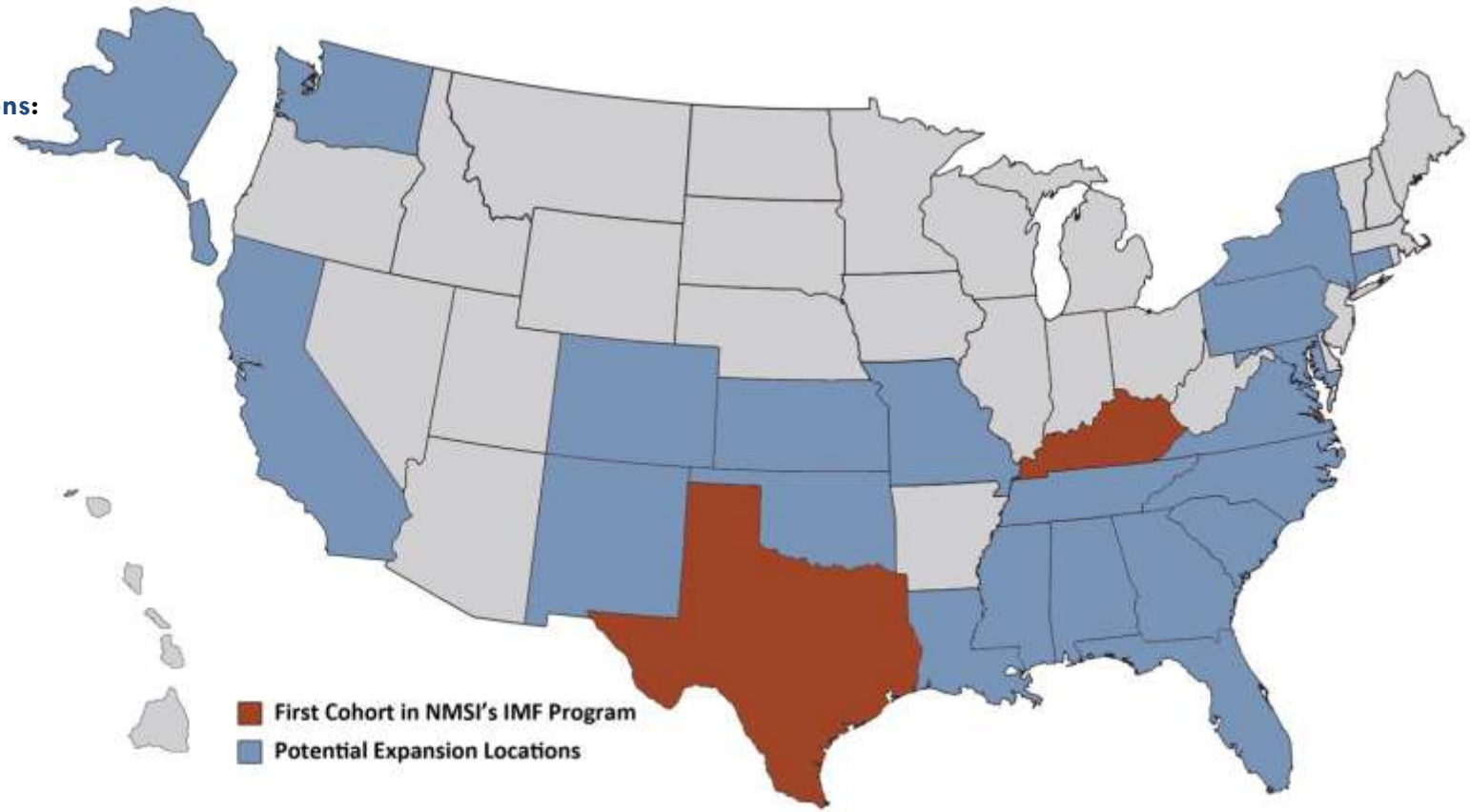
More can be done.

We are looking for partners to expand the Initiative for Military Families to additional public high schools. By 2011, we hope to be in 46 high schools reaching 30,000 students.

Public Schools Significantly Impacted by Military Families

First Cohort:
Kentucky
Texas

Potential Program Expansion Locations:
Alabama
Alaska
California
Colorado
Connecticut
Florida
Georgia
Kansas
Louisiana
Maryland
Mississippi
Missouri
New Mexico
New York
North Carolina
Oklahoma
Pennsylvania
South Carolina
Tennessee
Virginia
Washington



Young Leaders Program

The National Math and Science Young Leaders Program is a partnership between Fortune, ExxonMobil, and NMSI, and was developed to address the issue of women being left behind in the critical fields of math and science. The program consists of five elements: mentor/student communication, webinars, corporation site visits, Capstone Event, and paying it forward.

The program was originally launched at Fortune's Most Powerful Women Summit in 2008. Six students from various universities were chosen to be paired with six executives at participating corporations in this first cohort. This second cohort built on the initial success of the program as participation nearly quadrupled to include 22 outstanding students paired with 22 executives from across the country.

Participating corporations from this year's program included ExxonMobil, Ebay, Dupont, The Dow Chemical Company, Archer Daniels Midland, Intel, BlackRock, Electronic Arts, Alcoa Oil and Gas, Wal-Mart, Emerson, Marvell Semiconductor, AXA Equitable, Affiliated Computer Services, Accel, Prescription Solutions, and Time Inc.

Next Steps

Existing Demand – UTeach

There is high demand at universities and university systems across the country to begin UTeach replication.

California
CA State University System
UCLA
Stanford

Colorado
University of Colorado at Denver
Colorado State
Colorado School of Mines

Florida
Replicate UTeach in one additional university

Georgia
Georgia Tech
University of Georgia
Emory

Indiana
Purdue
Notre Dame

Kentucky
University of Kentucky
University of Louisville

Maryland
University of Maryland at College Park
UM at Baltimore

Massachusetts
University of Mass at Amherst
Boston University
Replicate UTeach in one additional university

Michigan
University of Michigan
Michigan State

Minnesota – Minnesota State Colleges and Universities
Minnesota State University-Mankato
Minnesota State University-Moorhead
St. Cloud State University

New York
CUNY
New York University
Cornell

North Carolina – UNC System
Appalachian State University
East Carolina University
Elizabeth City State University
Fayetteville State University
NC A&T State University
NC Central University
NC State University
UNC Asheville
UNC-Chapel Hill
UNC Charlotte
UNC Greensboro
UNC Pembroke
UNC Wilmington
UNC School of the Arts
Western Carolina University
Winston-Salem State University

Ohio
Ohio State
University of Ohio

Texas
Texas State University System

Existing Demand – APTIP States

There are five statewide non-profits eager to implement the APTIP in their states:

Colorado
The potential NMSI State Organization is the Colorado Legacy Foundation (CLF), an organization that works very closely with both the state Department of Education (CODOE). The Governor is very supportive of the potential program. CLF is already making significant strides in fundraising as well, raising a total of $300,000 from the Daniels Fund, the AMGEN Foundation, and NMSI. If fully funded, the APTIP would be in **53 schools** in Colorado impacting **71,025 students** in grades 9-12.

Indiana
The NMSI State Organization for Indiana is Notre Dame University. The Governor is aware of the potential program, and the state Department of Education is very engaged in the process of bringing APTIP to Indiana. Indiana's Department of Education has already established a statewide goal for AP courses that aligns perfectly with NMSI's suggested benchmarks. Indiana also has significant private sector support, with a $170,000 grant from The Lumina Foundation for the initiative. If fully funded, the APTIP would be in **60 schools** in Indiana impacting **66,035 students** in grades 9-12.

Michigan
The Michigan Mathematics Science Network (MMSN) is an established organization with 33 regional centers that provide leadership, curriculum support, professional development, and student services to educators in local school districts. MMSN has already raised $350,000 from The WK Kellogg Foundation for program support and implementation. If fully funded, the APTIP would be in **67 schools** in Michigan impacting **71,431 students** in grades 9-12.

Minnesota
Friends of Education (FOE) is the proposed NMSI State Organization. FOE understands the importance of data and is extremely data driven, an element that aligns well with NMSI's emphasis on data collection and analysis. FOE also has strong ties to the Minnesota Department of Education (MDOE), which recommended them to NMSI. If fully funded, the APTIP would be in **63 schools** impacting **86,613 students** in grades 9-12.

New Mexico
Advanced Programs Initiative is leading NMSI's expansion into New Mexico high schools, starting with two pilot sites this fall. API is a new non-profit foundation established through the leadership of U.S. Senator Jeff Bingaman that enables students to succeed in 2-year and 4-year colleges by preparing them to master advanced academic coursework in high school. API has identified **12 high schools** throughout the state that it would expand the APTIP into if fully funded.

Existing Demand – Initiative for Military Families

The Initiative for Military Families (IMF) is the coming together of a great partnership between NMSI, the Military Child Education Coalition, and several corporations to support children in America's military families. This effort addresses the national STEM crisis and helps military families by providing consistent high level STEM education in high schools serving military bases. The need is great: 160,000 young people in the U.S. have a parent who is currently deployed overseas, and at least a million children have a parent who was deployed in the last eight years.

This Initiative will expand NMSI's APTIP to public high schools serving military families across the country. While NMSI plans to ultimately replicate the APTIP program in over 150 of the nation's high schools that serve the largest numbers of students from military families, NMSI will be launching the Initiative in four high schools this fall – two near Fort Hood in Texas and two near Fort Campbell in Kentucky. IMF's vision is to provide students in military families with access to high-quality, advanced STEM courses and to maximize each student's ability to continue taking these courses even if they transfer to other schools as their parents are relocated during their military careers. By providing curriculum stability and expanding access to consistent and rigorous coursework, NMSI will enable students of military families to become more college-ready, leading to greater success in postsecondary education.

- If fully funded, **Phase I** will include 50 schools in the states of Colorado, Florida, Georgia, Kansas, Kentucky, North Carolina, South Carolina, Texas, Virginia, and Washington, impacting 71,839 students in grades 9-12.

- If fully funded, **Phase II** will include over 100 schools in the states of Alaska, Alabama, Arizona, California, Colorado, Connecticut, Florida, Georgia, Hawaii, Iowa, Kansas, Kentucky, Louisiana, Maryland, Mississippi, Missouri, Nevada, New Mexico, New York, North Carolina, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, and Washington, impacting over 150,000 students in grades 9-12.

NMSI Board of Directors

Tom Luce, NMSI CEO; former Assistant Secretary, US Department of Education

Bruce Alberts, Editor-In-Chief, Science Magazine; former President of the National Academy of Sciences

Norm Augustine, Lead Director, NMSI; former Chairman and CEO, Lockheed Martin

Gaston Caperton, President, College Board

Kenneth P. Cohen, Vice President Public and Government Affairs, Exxon Mobil Corporation

Nancy Grasmick, Superintendent, Maryland Department of Education

Bernard Harris, President and Founder, the Harris Foundation, Inc.; former NASA astronaut, first African American to walk in space

Ray Johnson, Senior Vice President and Chief Technology Officer, Lockheed Martin Corporation

Shirley M. Malcom, Head of Directorate for Education and Human Resources, American Association for the Advancement of Science

Sally Ride, President and CEO, Sally Ride Science; first American woman in space

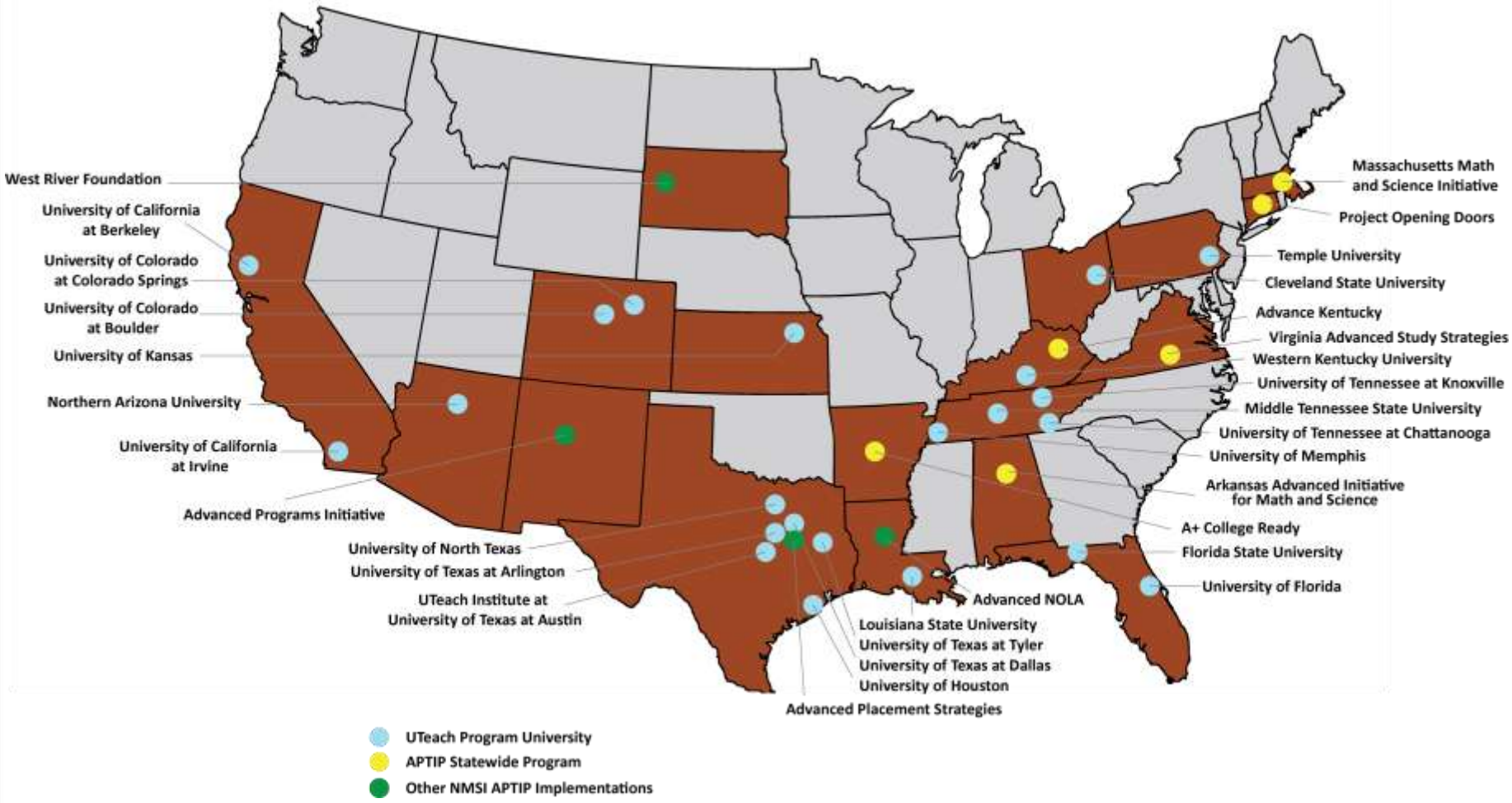
Arthur F. Ryan, Chairman, CEO, and President, Prudential Financial, Inc.

Beverly Tatum, President, Spelman College

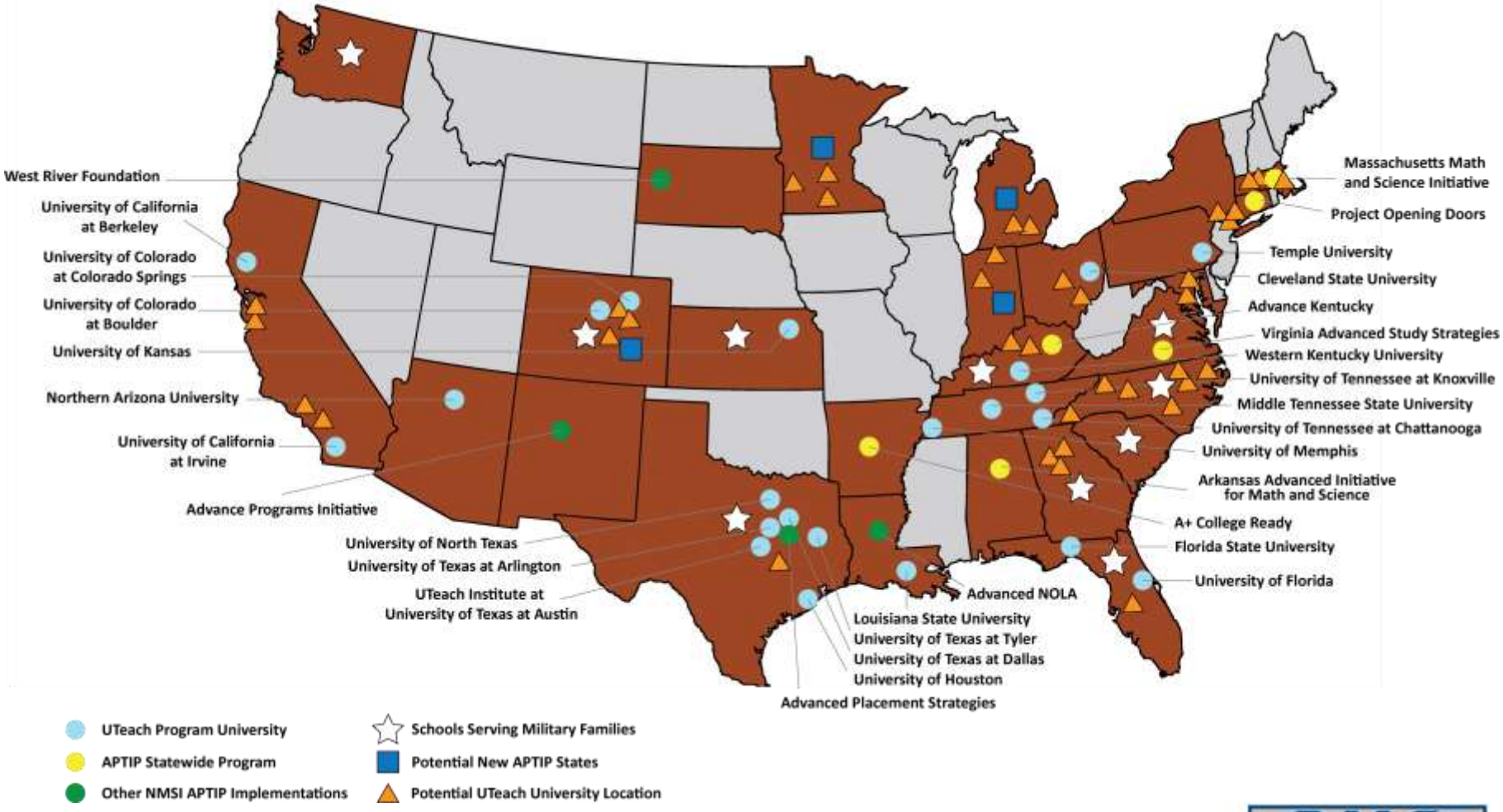
Roy Vagelos, former Chairman and CEO, Merck & Co., Inc.

Charles Vest, President, National Academy of Engineering; President Emeritus, Massachusetts Institute of Technology

Current NMSI Program Locations as of August 2010



NMSI Potential Locations



For more information, please contact:

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