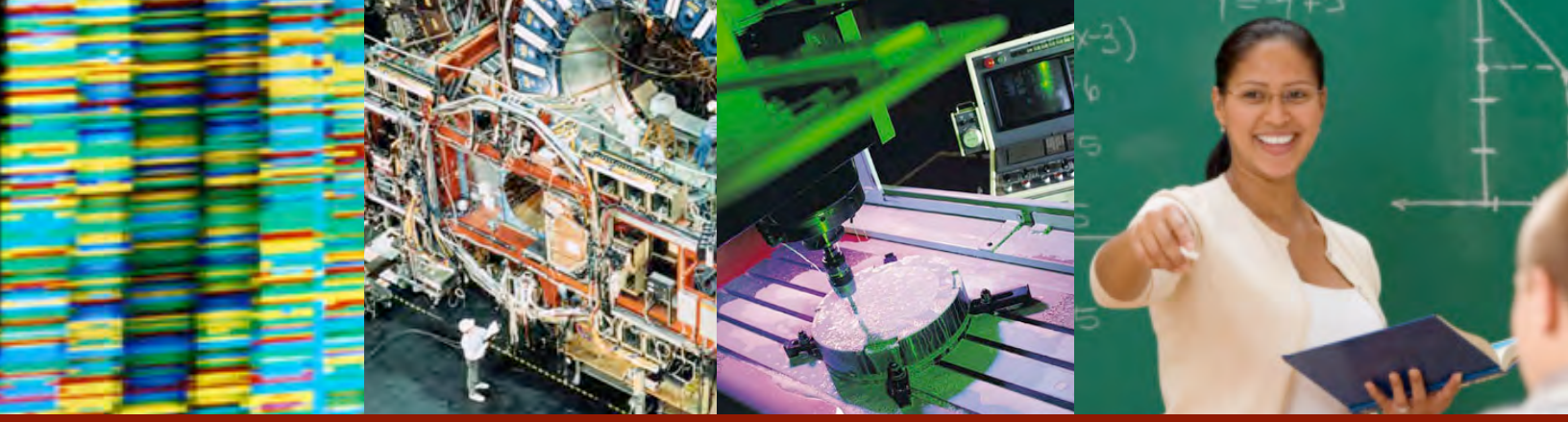


NATIONAL MATH AND SCIENCE INITIATIVE

"Action This Day"

—Sir Winston Churchill

America must boost math and science to remain competitive globally

NATIONAL MATH + SCIENCE INITIATIVE

MULTIPLYING SUCCESS

A PROUD HISTORY
Brainpower Has Been the Key to American Economic Power

For the last 200 years, math and science have been the dynamic force behind the U.S. economy – from the cotton gin to the telegraph to the incandescent light bulb to synthetic fabrics to miracle drugs to the microchip. When America led the world in math and science – fueled by an education system that made education accessible to every child – America moved forward.

1752 LIGHTNING ROD: *Benjamin Franklin's electricity experiments lead him to a valuable application – the lightning rod, which conducts lightning bolts harmlessly into the ground.*

1807 STEAMBOAT: *Robert Fulton, former miniaturist and landscape painter, opens American rivers to two-way travel. His steamboat the "Clermont" travels 150 miles upstream between New York City and Albany, New York.*

1876 TELEPHONE: *Alexander Graham Bell patents his telephone.*

1903 AIRPLANE: *At Kitty Hawk, North Carolina, brothers Orville and Wilbur Wright break the powered flight barrier with their gasoline-powered "Flyer I." The first powered, sustained and controlled airplane flight lasts 12 seconds.*

1926 ROCKET: *Robert H. Goddard, Professor of Physics, makes the first successful launch of a liquid-fueled rocket at his aunt Effie's farm in Auburn, Massachusetts. The rocket reaches 41 ft. in altitude.*

1958 INTEGRATED CIRCUIT: *Two months after his arrival at Texas Instruments, Jack Kilby fabricated all the components for a circuit – the transistor, resistor, and capacitor from a single piece of silicon, allowing the size of a circuit to shrink, even as it grew in complexity. This led to the first microchip, turning room-sized machines into personal computers.*

1983 PC: Time *names its 1982 "man" of the year – the personal computer. PCs have taken the world by storm, dramatically changing the way people communicate.*

1984 DELL: *Michael Dell used a $1,000 loan from his parents to start a computer accessories business in his University of Texas dorm room that revolutionized computer sales and grew in two decades to a $40 billion business.*

1985 GENETIC ENGINEERING: *The USDA gives the go-ahead for the sale of the first genetically altered organism. The rapidly growing biotech industry will seek numerous patents.*

1995 EBAY: *Today, eBay is the world's large online auction site with 84 million active users worldwide and more than $60 billion in transactions.*

"Today, more than ever before, science holds the key to our survival as a planet and our security and prosperity as a nation. It's time we once again put science at the top of our agenda and work to restore America's place as the world leader in science and technology."

—President Barack Obama

We Must Work Smarter to Thrive in a New World of Competition

The U.S. has had a proud history of inventions and innovations since colonial times, but the future of our intellectual capital is now at risk. America's size, natural resources and historical role as a superpower are no longer enough to ensure its economic future. In today's global economy, the U.S. is losing many of its previous competitive advantages. Upgrading the knowledge and skills of our workforce is critical. U.S. students must have the relevant knowledge of science, technology, engineering and math (STEM) to become a more competitive workforce.

The 20th Century very aptly was named "The American Century" by Henry Luce. Propelled by our world leadership in education and innovation, our country prospered and remained free.

Times have changed. Any of our citizens and leaders who were operating under the illusion that this comfortable lead would continue in the 21st Century, received a "wake up" call in 2007 as our economy began to hemorrhage. An emergency infusion of resources has been necessary to stem the bleeding, but simply stabilizing a sick system is not a cure.

The reality is that the United States is facing much more than a temporary economic crisis. Some sectors may be stabilizing, but our nation is not likely to see robust long-term growth unless it significantly enhances its ability to compete in today's Mumbai-to-Hong Kong-to-Brazil marketplace.

The symptoms of American educational decline have been apparent for several decades, but we have failed as a nation to respond. In 1983, the famous blue-ribbon report, "A Nation at Risk," warned that the U.S. faced a greater threat from the decline of its education system than from Communism. At that time, our country led the world in high school and college graduation rates. Today, the U.S. has dropped to 14th and 15th, respectively.

1983

The U.S. led the world in high school and college graduation rates in 1983. Today U.S. rates have dropped to 14th and 15th, respectively.

The evidence has been mounting that our nation has been living off the education surge from the G.I. Bill after World War II, which made higher education more affordable for many more Americans. Now, the post-war Sputnik generation that was educated in the 1950s and early 1960s are retiring and the current education system does not have enough math and science students in the pipeline to keep up with new competitors overseas.

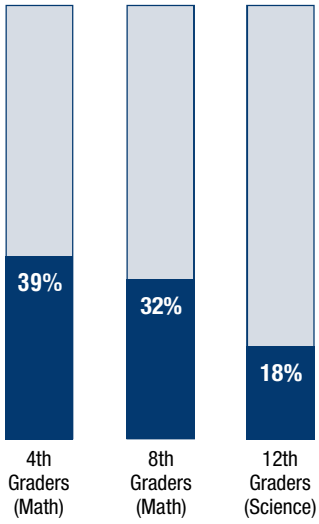
While America has been coasting on the momentum from yesterday's education lead, the Iron Curtain fell and free enterprise was embraced by a new wave of countries. Communications and technology advances have "flattened" the playing field so more workers overseas can compete for jobs that Americans used to hold. The U.S. now is faced with billions of new competitors who are vying to beat us at our own economic game – and they are beginning to do so, thanks to their stronger emphasis on math and science education.

"The financial crisis just made the hole deeper, which is why our stimulus needs to be both big and smart, both financially and educationally stimulating. It needs to be able to produce not only more shovel-ready jobs and shovel-ready workers, but more Google-ready jobs and Windows-ready and knowledge-ready workers."

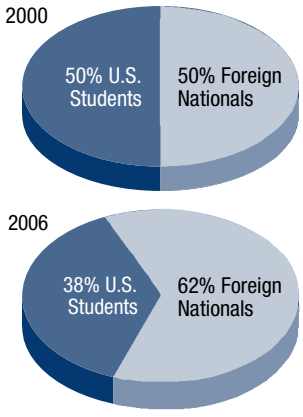
—Columnist Thomas L. Friedman, "The New York Times"

Consider These Recent Alarm Signals in Education:

Percentage of U.S. Students Performing at or Above Proficiency in Math and Science



Percentage of Engineering Doctoral Degrees Granted in the U.S.



+ The new Trends in International Mathematics and Science Study (TIMSS) showed some improvement in math performance by U.S. students, but foreign students improved even more. Average American science scores have stagnated since 1995.

+ The most recent National Assessment of Educational Progress figures showed that only 39 percent of fourth graders and 32 percent of eighth graders tested at or above proficiency in math, and only 18 percent of high school seniors perform at or above the proficient level in science. These results are a prescription for failure at a time when 8 out of 10 jobs in the next decade will require math and science skills.

+ A report issued by the National Center for Public Policy and Higher Education in December 2008 confirmed that other countries are outpacing the U.S. in providing access to college. Every state received a failing grade for college affordability except for California, which earned a "C" because of its community college system.

+ Just as science and technology are burgeoning around the world, the number of American engineers and physical scientists graduating has declined by 20 percent. The number of U.S. citizens receiving PhD's in engineering has declined by 34 percent and the number receiving bachelor's degrees in engineering has declined by 18 percent. Two-thirds of the students receiving PhD's in engineering in U.S. universities are non-U.S. citizens.

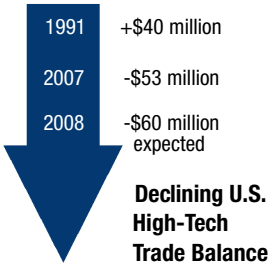
+ The Education Trust has reported that in high-poverty schools, two in five math classes have teachers without a college major or certification in math. This means many teachers are barely a chapter ahead of their students.

+ U.S. students recently finished well below average in international rankings by the Organization for Economic Cooperation and Development – 15th in reading, 19th in math and 14th in science. U.S. students ranked behind Canada, Japan, and Western Europe in math and science – even behind emerging European countries such as Slovenia, Estonia and even Liechtenstein. They scored ahead of just a handful of countries, including Greece, Turkey and Mexico.

"In a global economy, the best jobs are not going to go to the best in your class but to the best in the world," said Gary Phillips, a chief scientist for the American Institutes for Research in Washington, D.C. "Some of the Asian countries are just outstanding in math and science achievement, and we're way behind." Phillips' research shows that even American eighth graders in the best-performing states like Massachusetts rank significantly below eighth graders in the highest-achieving countries.

Compete or Become Irrelevant

Six years ago, the nation's high technology balance of trade went negative and has not come back. By last year, the annual gap between high-tech exports and imports had grown to $53 billion. The gap for 2008 is expected to be the largest ever – nearly $60 billion.



+ 77% of new research and development sites are being built in China or India. Bell Labs, home of the transistor and laser, has been sold to a French firm.
+ Our federal investment in physical sciences has been stagnant for 20 years. Investment in bio-sciences, after a five-year period of growth, is now declining.
+ Eight engineers can be hired in India for the cost of one in the U.S.; five chemists can be employed in China for the cost of one in the U.S.
+ Nearly 60% of U.S. Patents in information technology now originate in Asia.
+ One third of current U.S. jobs are potentially capable of being exported.
+ The U.S. Education Department estimates that 60% of the jobs opening in the 21st Century will require skills only 20% of the current workforce possess.
+ The U.S. produced 122,450 total engineering and science graduates in 2007, but less than two-thirds are eligible for high-level security clearances based on citizenship.

5X

U.S. jobs that demand technical training are growing five times faster than those requiring non-technical skills.

National Math and Science Initiative Has Answers

Upgrading the knowledge and skills of our workforce is critical. U.S. students must have the relevant knowledge of science, technology, engineering, and math (STEM) to become a more competitive workforce. Until 2007, there was no organized national response from the private sector to this competitiveness challenge. The National Math and Science Initiative (NMSI) was launched in March 2007 by top leaders in American business, education and science in response to the call for action by the National Academies in "Rising Above the Gathering Storm," which found that low performance in math and science is hurting the United States' global competitiveness. Today, NMSI is helping remedy this drastic decline in math and science education by replicating proven programs on a national scale.

American demand for scientists and engineers is expected to grow four times faster than all other professions over the next decade, according to the U.S. Bureau of Labor Statistics. Yet today, only five percent of U.S. college undergraduates earn degrees in science and engineering, whereas in China, 42 percent of students do.

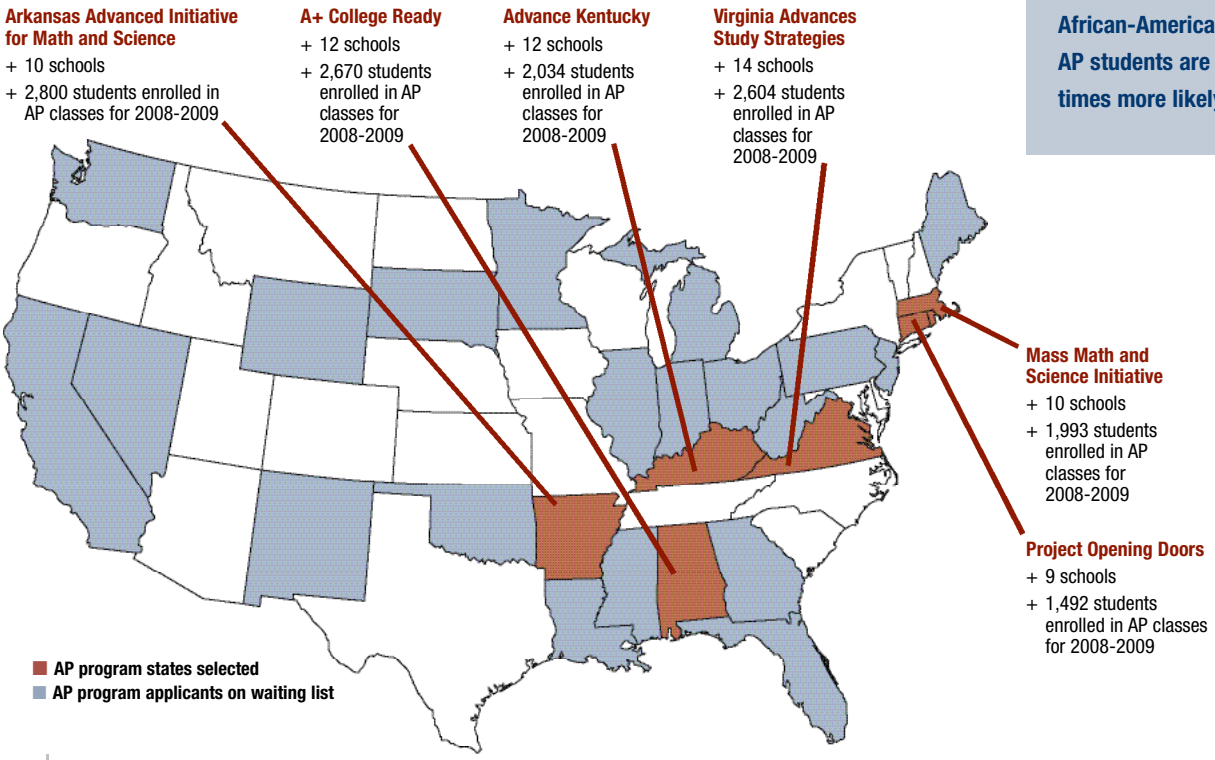
AP Training and Incentives Make a Difference

Through our Advanced Placement* Training and Incentive Program (APTIP), NMSI has awarded more than **$79 million in grants to non-profits in six states** to promote student participation in Advanced Placement math, science and English courses. In just one year, **enrollment in program schools in these states has increased nearly 70 percent**, bringing more rigorous math and science education to **over 13,000 students**. Even more dramatically, APTIP is **producing a stunning 122 percent increase in minority students** taking advanced courses. This program works in every kind of school district, large and small. It uses existing teachers who receive intensive training. And, APTIP has proven success in preparing American students for success in college.

3X

AP students are three times more likely to earn a college degree. African-American AP students are four times more likely.

AP PROGRAM SITES



*Advanced Placement and AP are registered trademarks of the College Board, which was not involved in the production of, and does not endorse, this product.



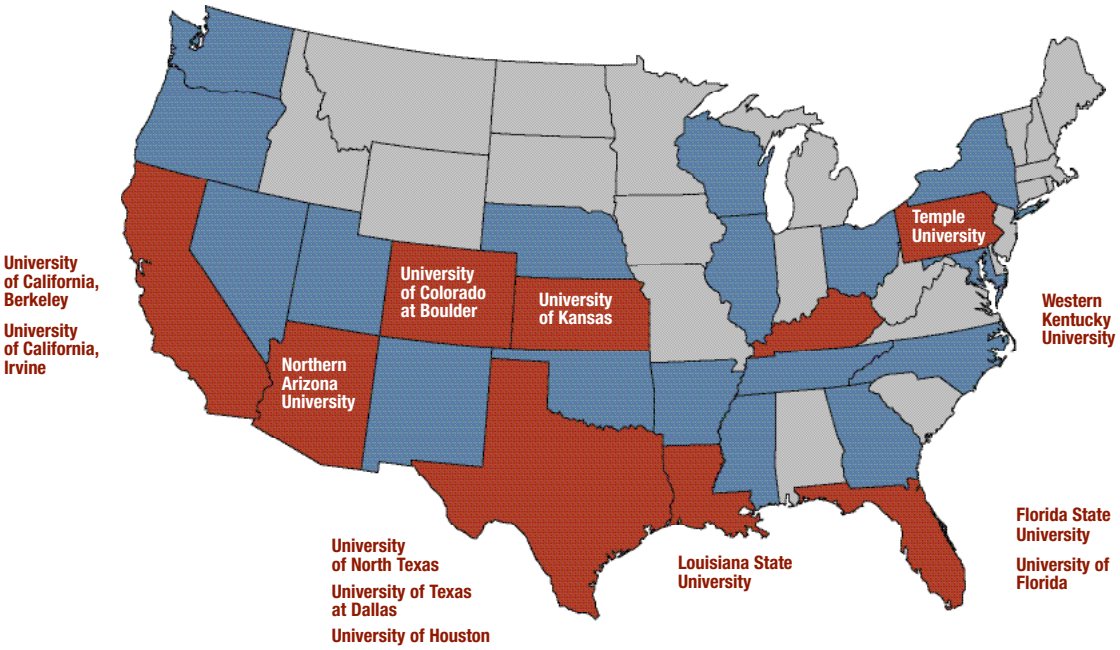
UTeach Is Training Tomorrow's Teachers

In addition, NMSI has issued **nearly $30 million in grants to 13 colleges and universities** across the country to replicate the UTeach program. **More than 1,000 students** now are enrolled in UTeach programs to train math and science teachers. Thanks to our partners at 13 universities, this program is grooming a new wave of teachers to teach America's young people crucial skills in math and science. UTeach makes sure teachers have a strong background in the subjects they teach. And, it prepares the college students to be certified as teachers at no extra cost. This program has a solid track record of success, so we know it works.

70%

UTeach graduates have a 70 percent teacher retention rate, compared to a national average of 50 percent.

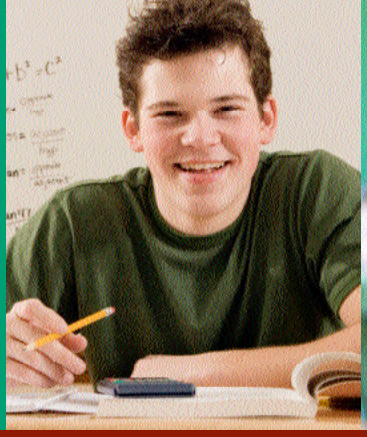
UTEACH REPLICATION SITES



Programs launched in 2008

States where universities have applied

"We do produce students who function at the highest levels in math and science internationally," says Vivien Stewart, Vice President for Education at Asia Society in New York. "The problem is we don't produce enough of them."



These Programs Merit Wider Use

After less than two years, APTIP and UTeach are making progress in 14 states – and there is a waiting list more than double that number to adopt the programs. Looking ahead, NMSI will move forward to expand our programs and create new partnerships that will multiply that success on a broader scale.

In the next five years, NMSI expects to have AP Training and Incentive Programs in **25 states**, impacting students in up to **2,000 U.S. high schools**. And, it is anticipated the UTeach program will be offered in as many as **50 universities**, dramatically multiplying the number of math and science teachers with content knowledge and certification in our country.

2K

In the next five years NMSI expects to have APTIP in nearly 2,000 U.S. high schools.

APTIP and UTeach are exactly the kind of public-private cooperation that our country needs to ensure more students are college ready and work ready. They are educating a new generation for the challenges of tomorrow so our country can compete in the high-tech, high-stakes global economy. There is a waiting list for these programs and much more work to do in the months ahead, but a needed structure for change is now in place.

We Must Act Now

All of us in America now must commit to making math and science education a priority in this country if we are to effectively compete on a global scale.

Funding longer-term cures for our economy must be a high priority. Shoring up our country's ability to compete in the 21st Century economy through improving math and science education is the best way to truly alleviate our economic anxiety.

We desperately need better math and science classes.

We need many more math and science teachers.

And we need to act like our future depends on it.

After all, it does.

"Now that we know what works, we should ask government and corporate leaders to take action today. Every minute we wait, we fall further behind other countries."

—Tom Luce, CEO, National Math and Science Initiative

HOW YOU CAN HELP

Help us multiply success across the nation!

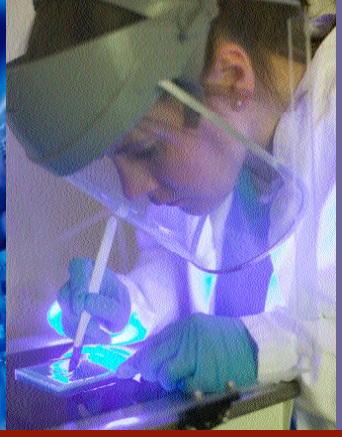
Thanks to the vision of our inaugural supporters, NMSI is off to a great start. We are fortunate to have lead financial support from Exxon Mobil Corporation, the Bill & Melinda Gates Foundation and the Michael & Susan Dell Foundation. We also have assistance from IBM, Perot Systems, DreamWorks and Texas Instruments. But, we need more partners for this crucial national mission.

You Can Get Involved by:

+ **Providing a donation**
  Help from corporations, foundations and individuals is needed to move math and science education forward.
+ **Applying for a grant**
  NMSI has programs that can work in your state or university.
+ **Helping your state or university**
  You can help implement APTIP and UTeach programs close to home by providing local donations, mentors and in-kind support to your area schools.

Congress Can Play a Key Role

It is crucial that the nation act now to make American competitiveness and the preparation of a highly capable and technically skilled workforce a top priority. We urge congress to collaborate with the National Math and Science Initiative in a public/private partnership to support programs in the America COMPETES (Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science) Act, which was passed in 2007 but never fully funded. We must act now. Our country is facing more than a temporary economic crisis – it will be increasingly difficult to achieve long-term growth if we do not work together to provide a more dynamic 21st Century engine for our economy.



Job outsourcing is the "third Industrial Revolution" that threatens the jobs of 28-42 million U.S. workers, according to Alan Blinder, former Vice Chair of the Federal Reserve.

"Will America lead…and reap the rewards? Or will we surrender that advantage to other countries with clearer vision?" —Susan Hockfield, President, MIT

NATIONAL MATH AND SCIENCE INITIATIVE

NMSI's mission is to advance math and science education in the United States by expanding programs with proven results on a national scale in order to have a positive impact on America's 50-million-student public school system.

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Dean of the College of Natural Sciences at The University of Texas at Austin

Tracy LaQuey Parker, Director of the UTeach Institute
Former Manager of Education Market Development at Cisco Systems; Director of Business Development at Parker Solutions Group

America's Tradition of Innovation Must Move Forward

1794 COTTON GIN: *Eli Whitney patents his machine to comb and deseed bolls of cotton. His invention makes possible a revolution in the cotton industry and the rise of "King Cotton" as the main cash crop in the South.*

1859 OIL WELL: *Drilling at Titusville, Pennsylvania, "Colonel" Edwin Drake strikes oil at a depth of 69.5 feet. Prior to that, oil, which had been used mostly as a lubricant and lamp fuel, had been obtained only at places where it seeped from the ground. Western Pennsylvania witnesses the world's first oil boom.*

1877 PHONOGRAPH: *Working with a team of engineers, Thomas Alva Edison perfects a system of sound recording and transmission. The first recording replayed is a voice saying "Mary had a little lamb. Its fleece was white as snow."*

1902 AIR CONDITIONING: *Working as an engineer, Willis H. Carrier designs the first system to control temperature and humidity. He will go on to found his own company, the Carrier Corporation.*

1908 MODEL T: *Henry Ford owes much of his success to his improved assembly line process, which by 1913 will produce a complete Model T every 93 minutes.*

1927 TELEVISION: *Philo Farnsworth demonstrates the first television for potential investors by broadcasting the image of a dollar sign.*

1969 ARPANET: *The seed of what would become the Internet was created by ARPANET as a way of communicating in the event of a nuclear attack during the Cold War. The work was carried out by a group of researchers working for the Defense Advanced Research Projects Agency.*

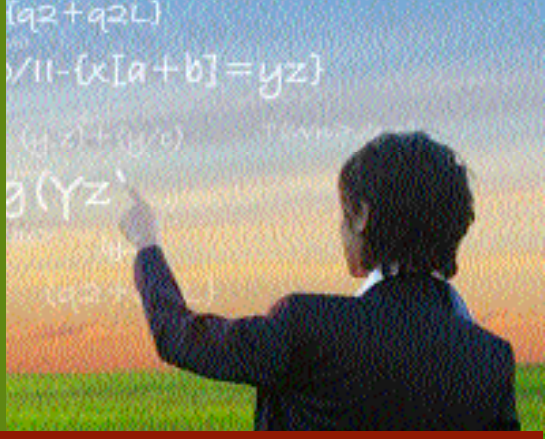
1975 MICROSOFT: *Old high school friends Bill Gates and Paul Allen form a partnership known as Microsoft to write computer software. They sell their first software to Ed Roberts at MIT, which has produced the Altair 8800, the first microprocessor-based computer.*

1989 MOSAIC: *After British engineer Tim Berners-Lee conceives of the World Wide Web, Marc Andreesen develops the Mosaic web browser at the National Center for Supercomputing Applications in 1993, providing a broader use of the web. Such technological breakthroughs have made possible airline booking sites, Amazon.com's book-selling bazaar, as well as a new era of social networking through website systems such as LinkedIn, MySpace, Facebook, and Twitter.*

1998 GOOGLE: *Two Stanford graduate students, Larry Page and Sergey Brin, come up with the idea for a super web browser and set up operations in a friend's garage. Today Google is the world's largest search engine and has become a household word, featuring services such as satellite maps that zoom in on locations around the world and translations into dozens of languages.*

"Only by providing leading-edge human capital and knowledge capital can America continue to maintain a high standard of living – including providing national security – for its citizens."

—Norman Augustine, Chair
Rising Above the Gathering Storm Committee



The Race Is on in Math and Science

Math and science provide the competitive edge in the global marketplace. They are essential for the innovation that moves our economy forward. And yet America's 50 million public school students are not getting the math and science skills they need to prepare them for good jobs and to keep America competitive in the global economy.

The National Math and Science Initiative is the public-private partnership that provides the ideas, inspiration, and resources to help America close the competitive gap.

National Math and Science Initiative
325 N. St. Paul Street, Suite 2900
Dallas, TX 75201
214-665-2500
www.nationalmathandscience.org