



MULTIPLYING SUCCESS

Maintaining Global Leadership: Improving Student Performance in Math and Science

Gerald McElvy

President

ExxonMobil Foundation



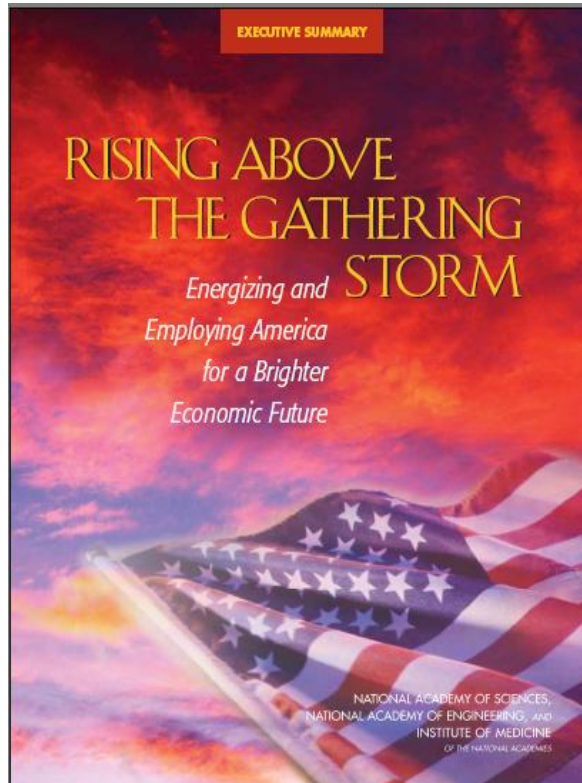
America's Education is Falling Behind

- + In 2004 India awarded 215,000 degrees in engineering, computer science, and information sciences, China awarded 644,106 degrees and the United States awarded 222,335 degrees.
- + Only 29% of American fourth grade students, a third of eighth grade students; and barely 18% of twelfth grade students ***perform at or above the proficient level in science.***
- + More than half of all science and engineering degreed workers are over 40-years-old; 26% are over 50-years-old.
- + Yet less than 15% of U.S. students have the math and science prerequisites to be successful.
- + Eighty percent of jobs in the next decade will require some form of math and science.





Tangible Recommendations to Address the Growing Crisis: NMSI's Starting Point



20 national leaders recommended solutions to the crisis in the *Rising Above The Gathering Storm* report.

Their highest priority: Dramatically improve K-12 math and science education nationally by replicating programs proven to work.

These programs need to:

-Produce more, and more effective, math and science teachers

-Substantially strengthen the skills of existing teachers through training

-Dramatically enlarge the pipeline of students with the desire and preparation to pursue science, technology, engineering and mathematics at the undergraduate level and beyond.



National Math and Science Initiative: Board of Directors

Tom Luce, NMSI CEO

Bruce Alberts, Former President of the National Academy of Sciences

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Roger Enrico, Former Chairman and CEO, Pepsi

Nancy Grasmick, Superintendent, Maryland Department of Education

Bernard Harris, President and CEO, Vesalius Ventures; former Astronaut

Susan Hockfield, President, Massachusetts Institute of Technology

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

Sally Ride, President, Sally Ride Science; former NASA Astronaut

Arthur Ryan, Chairman and CEO, Prudential Financial

Beverly Tatum, President, Spelman College

Roy Vagelos, Former Chairman and CEO, Merck

Charles Vest, President Emeritus, Massachusetts Institute of Technology

Carl Wieman, Nobel Prize Winner; Director, Carl Wieman Science Education Initiative, University of British Columbia; Director, Science Education Initiative, University of Colorado





NMSI Programs

We began by selecting two programs endorsed by the National Academies in *The Gathering Storm* report and Congress in the America COMPETES Act.

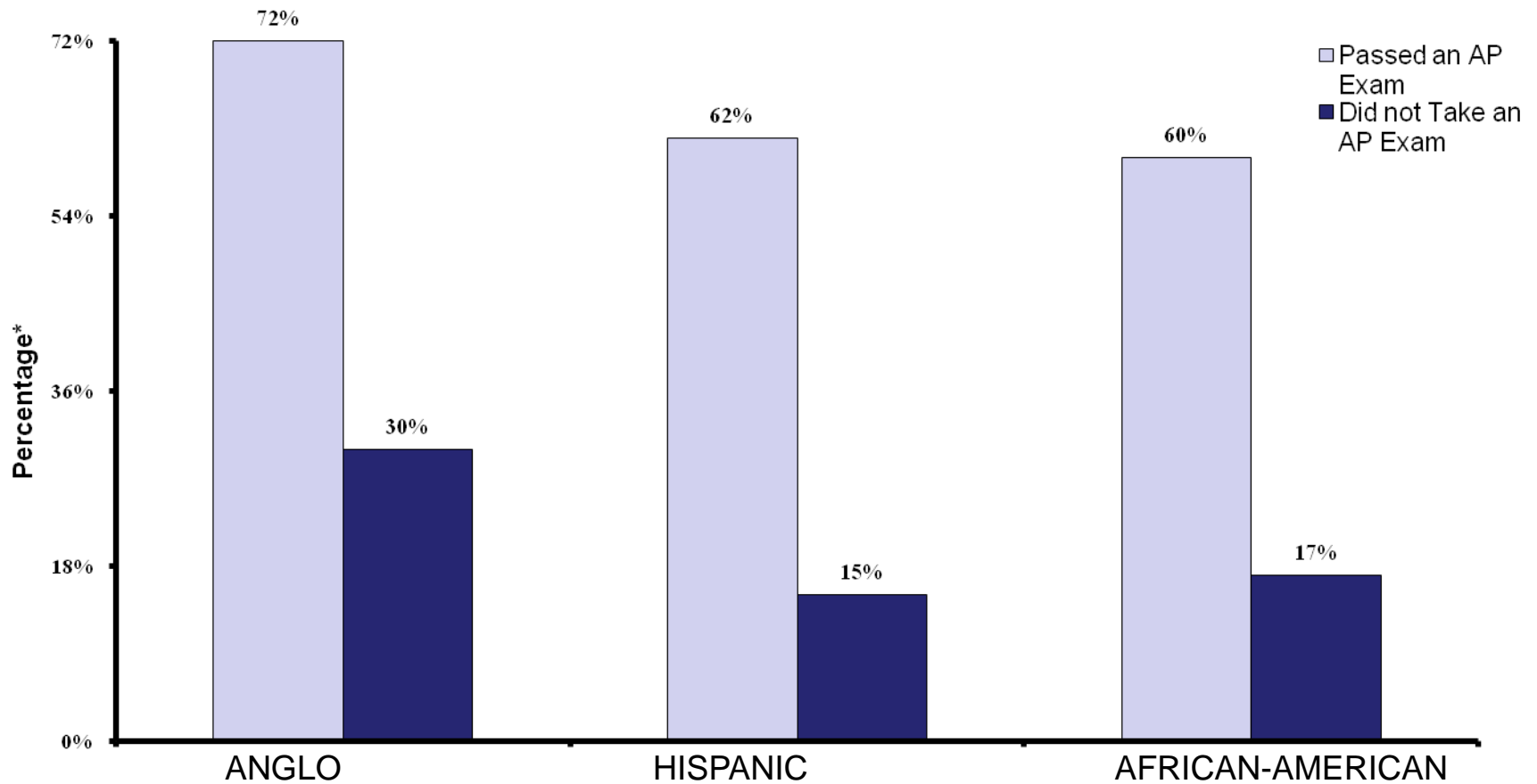
- 1. The Advanced Placement Training and Incentive Program** has produced dramatic achievement gains in rigorous math and science courses. Students who pass an AP exam are more likely to attend and graduate from college than students who do not participate in AP. Our goal is to increase the number of students taking and receiving qualifying scores in AP math, science, and English exams.
- 2. The UTeach Program** is a teacher preparation program in universities that recruits content majors (in math, science, engineering and technology) into teaching – resulting in improved teacher quality and production. UTeach produces teachers that are confident and competent in teaching their subject matters, and the majority of UTeach graduates enter and stay in teaching at significantly higher rates than the national average.





Why AP? College Graduation Rates Increase for Students Who Pass at Least One AP Exam

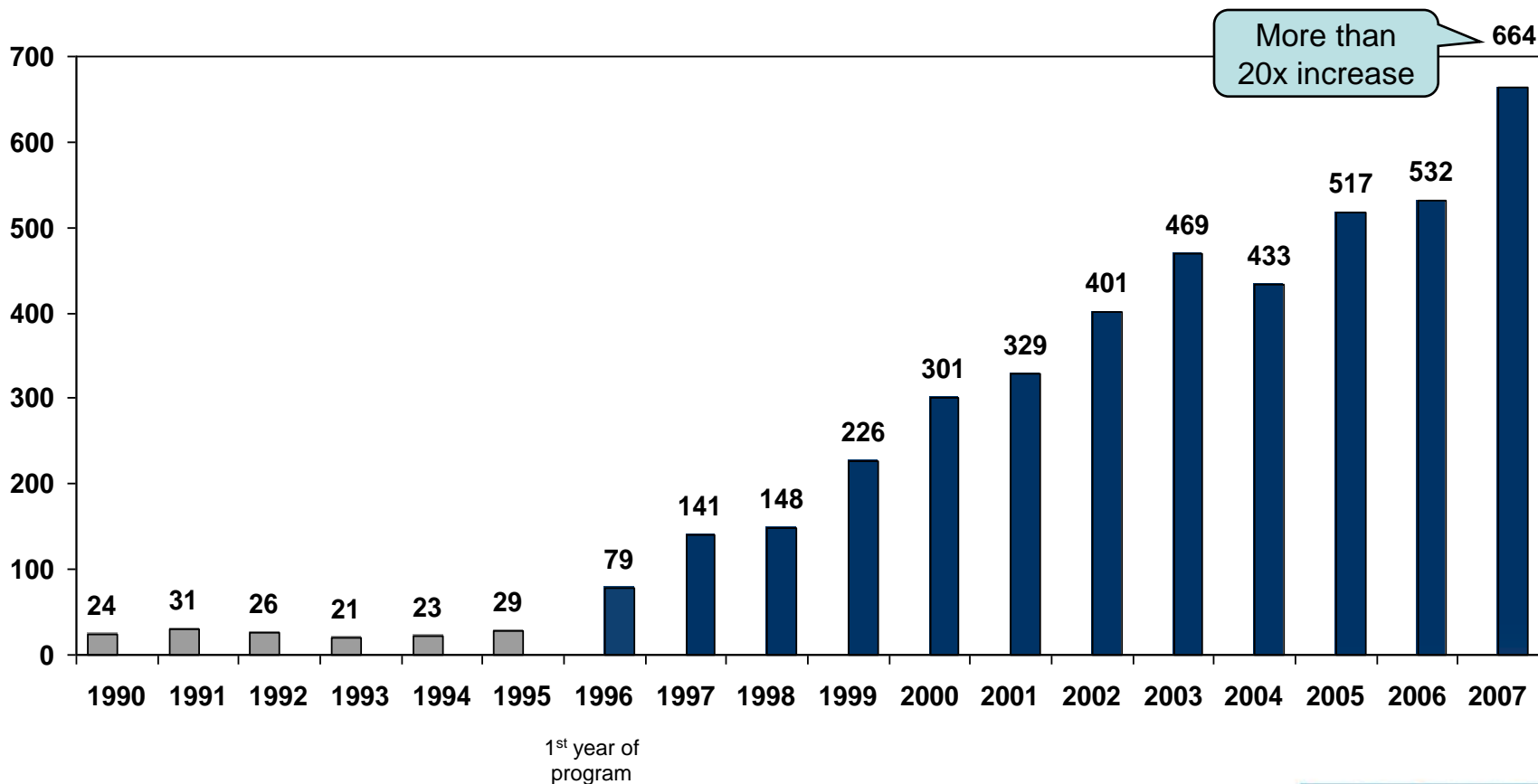
College graduation rates dramatically increase irrespective of ethnicity.





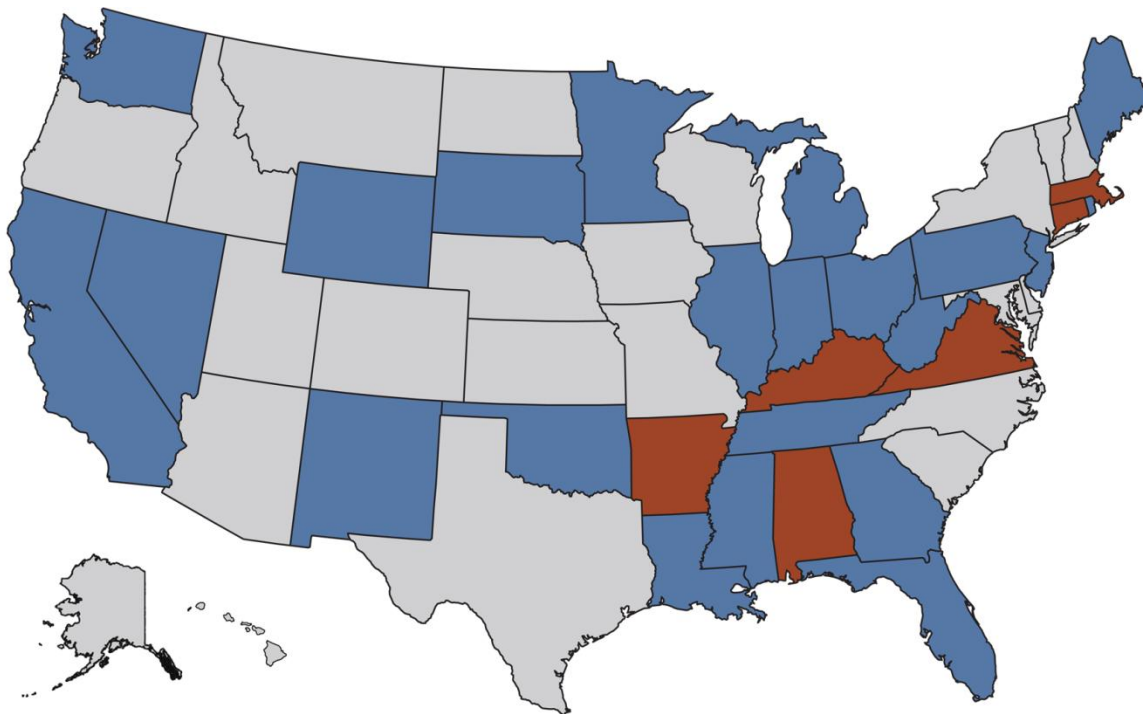
Minority Passing Scores Increased Even More at These Original 10 Schools

Number of African American and Hispanic passing scores on math, science, and English AP exams





AP Training and Incentive Program Applications and Awards



STATES ON WAITING LIST FOR AP TRAINING AND INCENTIVE GRANTS

- | | | | |
|-----------------|----------------|-------------------|-------------------|
| 1. Georgia | 8. Florida | 15. Indiana | 22. Alabama |
| 2. Maine | 9. Illinois | 16. Louisiana | 23. Arkansas |
| 3. Mississippi | 10. New Mexico | 17. Michigan | 24. Connecticut |
| 4. Nevada | 11. Ohio | 18. Minnesota | 25. Kentucky |
| 5. New Jersey | 12. Oklahoma | 19. Pennsylvania | 26. Massachusetts |
| 6. Rhode Island | 13. Wyoming | 20. South Dakota | 27. Virginia |
| 7. Tennessee | 14. California | 21. West Virginia | 28. Washington |

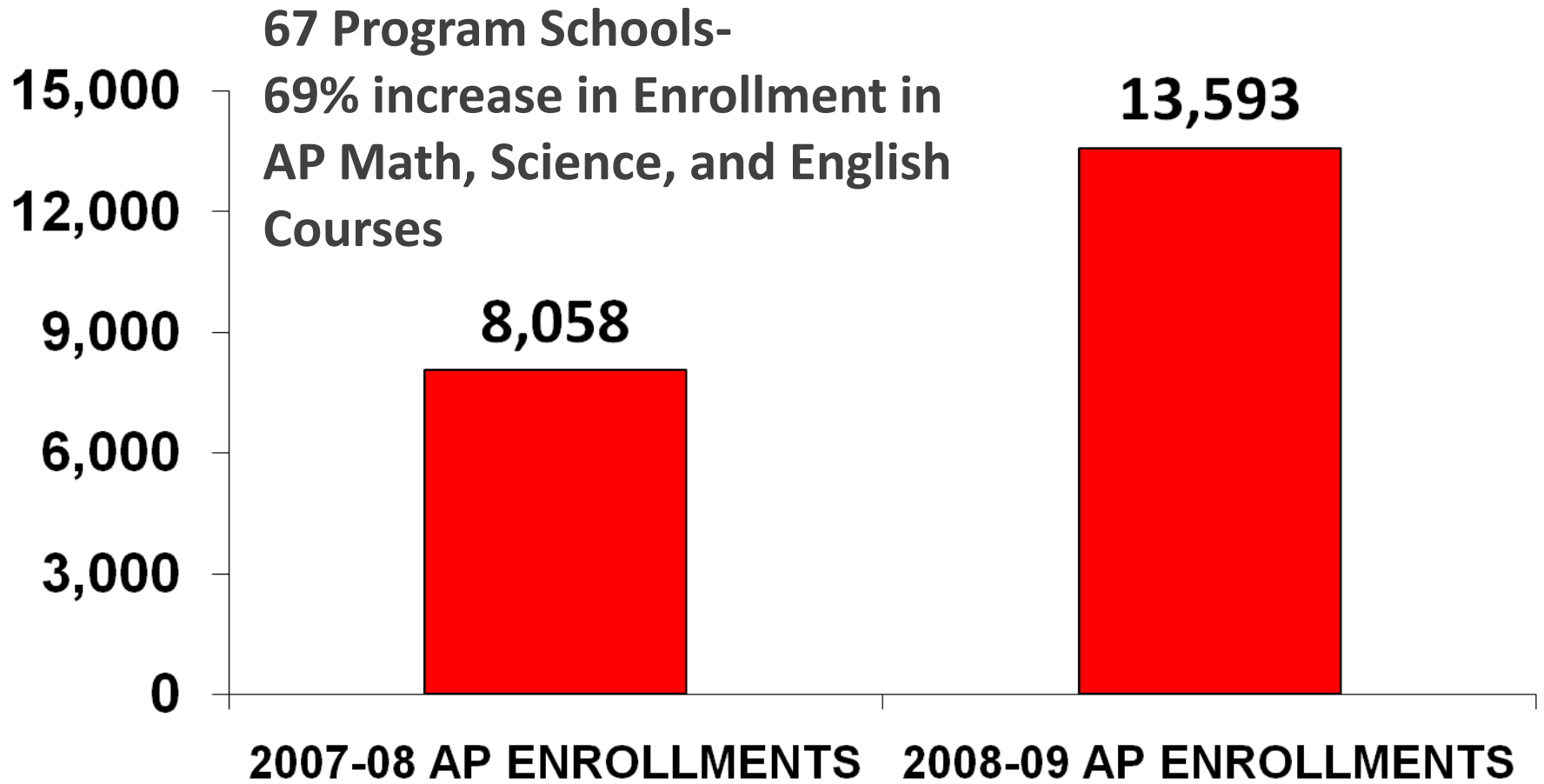
AWARDED STATES AP GRANTS

1. Alabama
2. Arkansas
3. Connecticut
4. Kentucky
5. Massachusetts
6. Virginia





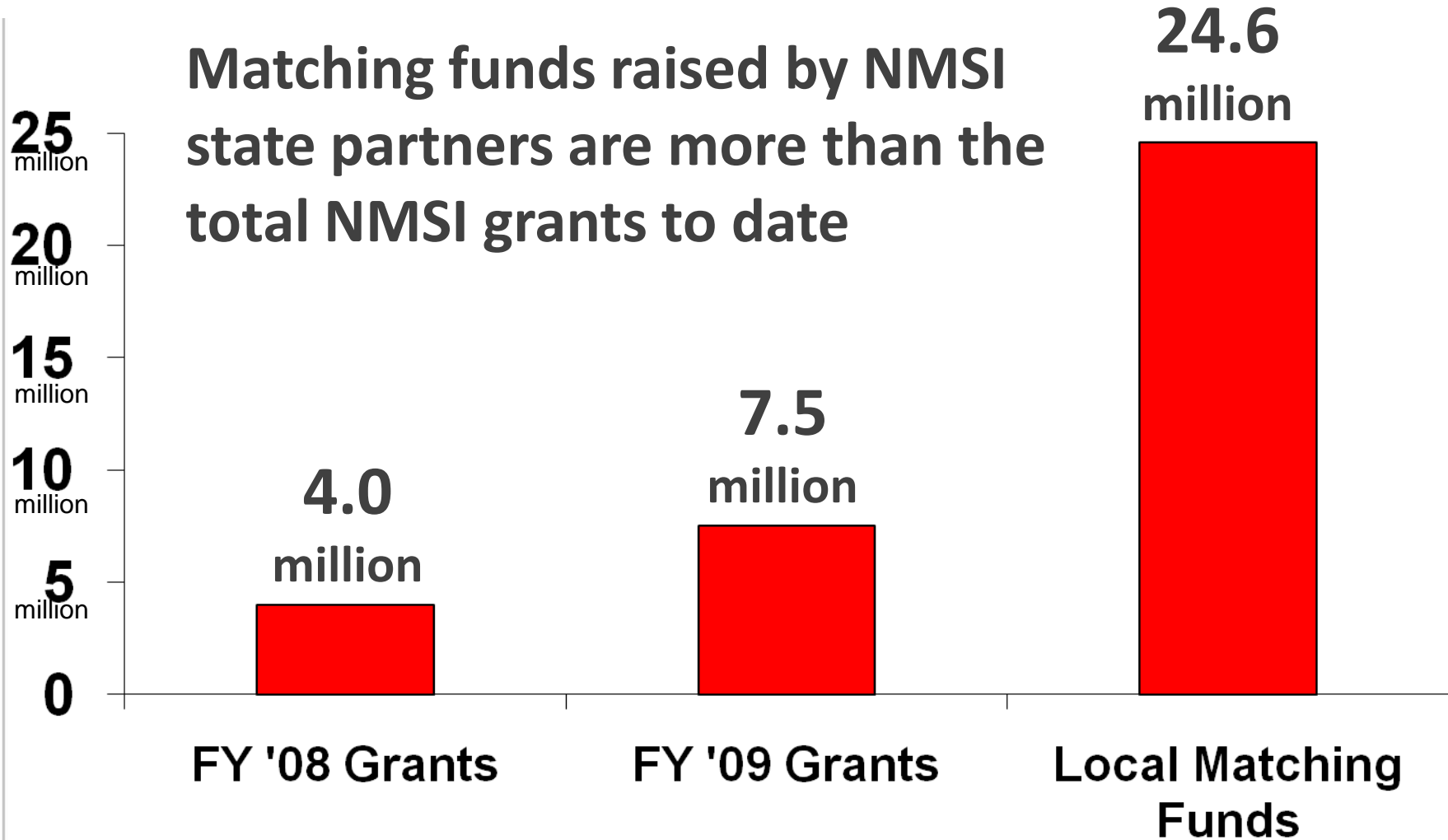
AP Training and Incentive Program 1st Year Enrollment Increases





Impressive Matching Funds Raised by NMSI State Partners

Matching funds raised by NMSI state partners are more than the total NMSI grants to date





Looking Ahead: AP Program

NMSI GOALS FOR NEXT YEAR

- The number of passing math, science, and English AP Exams will increase 82% from 2007 to 2009, which is approximately 5.5 times the national historical average.
- NMSI operations in 145 public high schools.
- Over 27,000 high school students enrolled in rigorous AP math, science, and English courses.
- 1,000 NMSI-trained AP teachers.

NMSI GOALS IN FIVE YEARS

At the end of NMSI's five year grant period, we project that our six state partners will have sustainable operations in 350 public high schools, 2,500 NMSI-trained teachers, and impacted over 150,000 students.





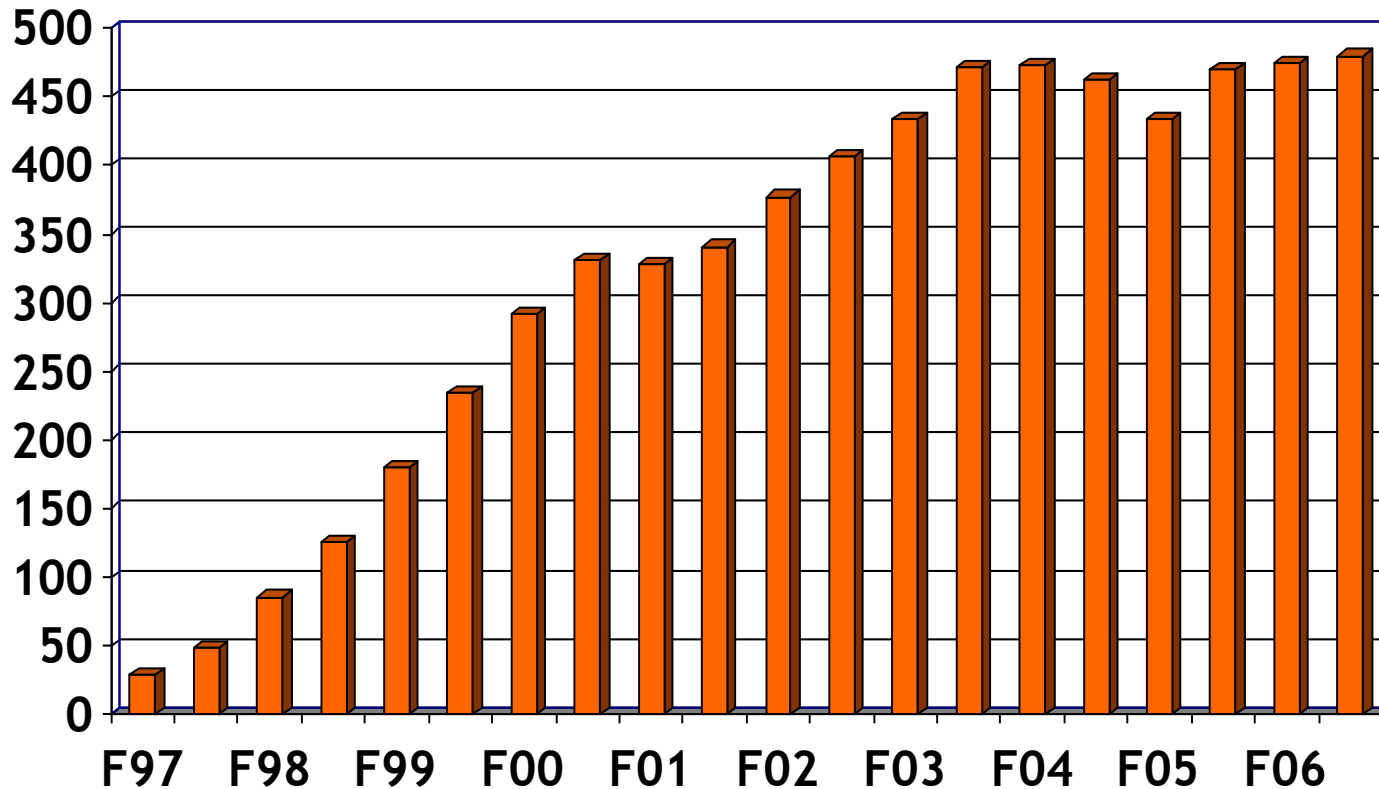
The UTeach Program

- + **The UTeach Program** is an innovative teacher preparation program in universities that recruits talented content majors (in math, science, engineering and technology) into teaching – resulting in improved teacher quality and production.
- + UTeach produces teachers that are confident and competent in teaching their subject matters.
- + UTeach **certifies over 70 students** per year to be math, science, or computer science secondary teachers—more than double those certified prior to the program.
- + **85 percent** of certified graduates go on to teach immediately, and all of those teach the hard to staff subjects: math, science, or computer science.
- + **70 percent of UTeach teachers are still teaching five or more years after entering the field**, compared with fewer than 50 percent nationally.
- + About 2/3 of UTeach graduates teach in major cities, and about **half teach in schools where more than half of students receive free or reduced price lunch.**



The UTeach Program significantly increases the number of math and science students pursuing a teaching career.

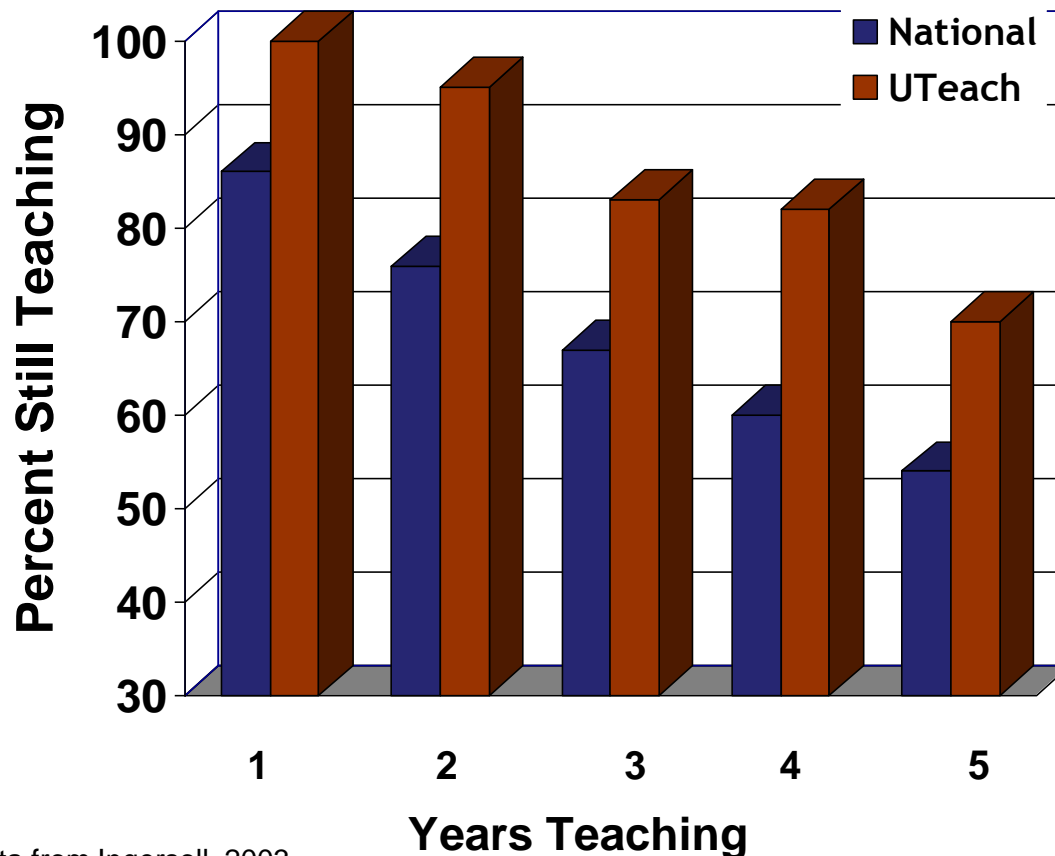
Enrollment data from the University of Texas, where the UTeach Program originated, showing dramatic enrollment increases of students in math and science pursuing a teaching certificate.





The UTeach Program leads to higher teacher retention

The majority of UTeach graduates enter and stay in teaching at significantly higher rates than the national average.

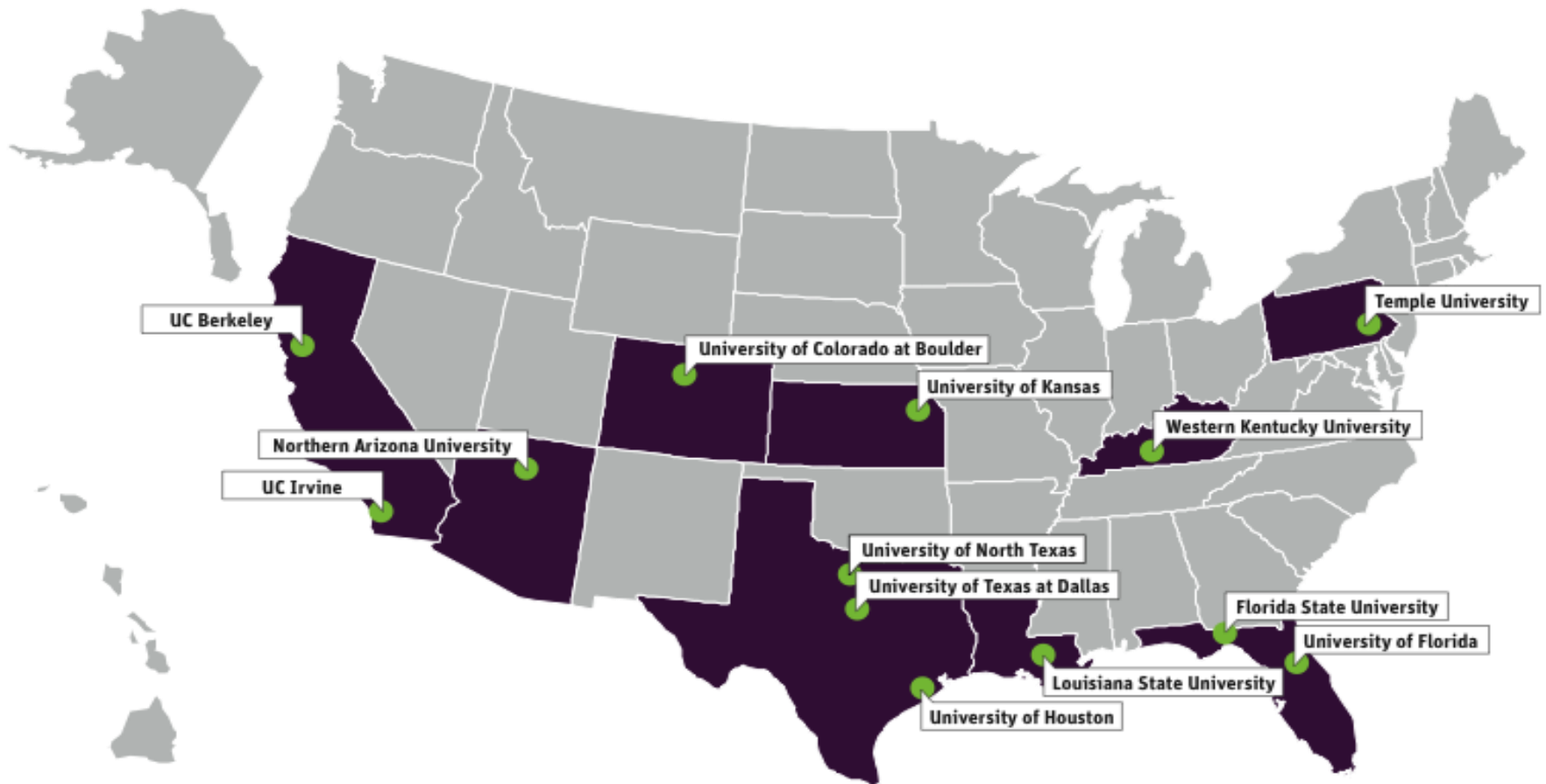


45% of UTeach grads teach in schools with more than 40% low-income students.

* National Data from Ingersoll, 2003



UTEACH Replication Sites





UTEACH Enrollment Update

The UTeach program is being replicated at 13 universities across the country. In our first year, over 1,100 students have enrolled in the program. There is so much demand that several of the universities have waiting lists.

University	Number of Students Enrolled
Northern Arizona University	78
University of California at Berkeley	28
University of California at Irvine	70
University of Colorado at Boulder	97
Florida State University	79
University of Florida at Gainesville	70
University of Kansas	100
Western Kentucky University	41
Louisiana State University	138
Temple University	62
University of Houston	120
University of North Texas	89
University of Texas at Dallas	42
TOTAL	1,104

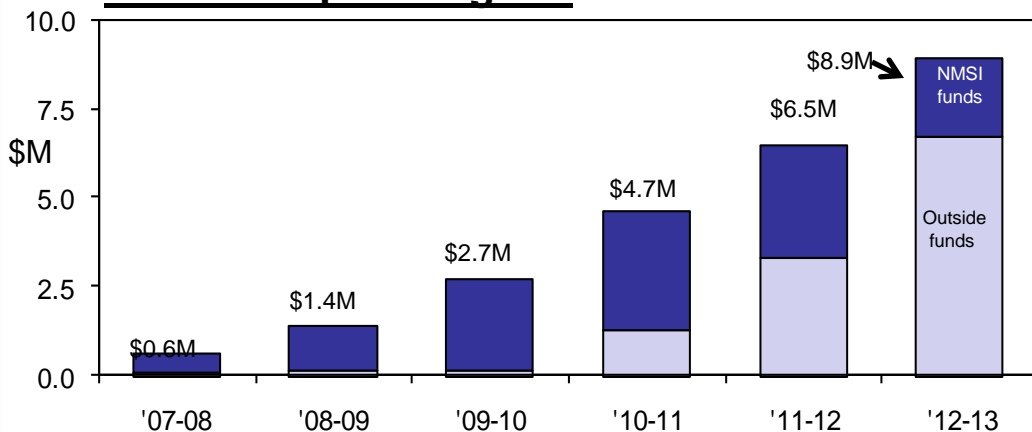
In 2007, Florida's 11 public universities and 29 private colleges graduated only 69 secondary science teachers.

That same year, The University of Texas, through UTeach, produced 70 graduates that were math and science content majors with teaching credentials.

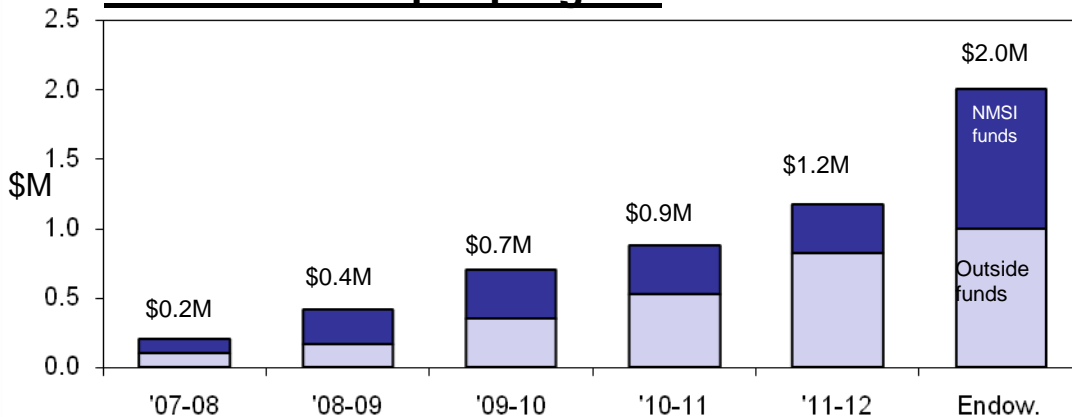


Our Programs Build Partnerships That Are Sustainable Beyond The Grant Period

AP: Costs per Program



U Teach: Costs per program



Funding principles

- + Averaged over the entire grant period, about half of funds are from NMSI.
- + The level of outside funds are the minimums that grantees are expected to contribute.
- + Outside funds will be a mix of private and public money and will vary by state or institution.
- + Continuance of awards and amount of NMSI support will be contingent upon level of success in implementing the program (including the ability to raise funds).
- + NMSI expects programs to continue after the end of the grant period (and the funding structure was designed to accomplish this).





NMSI's Approach: Bring Best Practices in Management to the Education Sector

- + **Set big, clear goals that address a significant and well-defined issue.**
- + **Do what works: scale programs with proven, documented results.**
- + **Create a competitive and robust process for selecting grantees.**
- + **Develop proprietary data collection and evaluation mechanisms of a scale previously unknown in the education sector.**
- + **Ensure long-term sustainability—require both an increasing financial match and increasing scale over the course of the grant period. Our programs don't “go away” whenever funding stops.**
- + **Require results and measure them via clear and objective criteria.**
- + **Provide donors with opportunities for participation and recognition.**





Biography of Gerald W. McElvy

Gerald W. McElvy is President of the ExxonMobil Foundation, the primary philanthropic arm of Exxon Mobil Corporation. The Foundation's focus areas include math and science education, fighting malaria and other infectious diseases, empowering women and girls in developing countries, public policy, and civic and community programs in regions where ExxonMobil has significant operations.

Mr. McElvy has been employed by ExxonMobil for more than 31 years and has extensive financial and general management experience. Prior to assuming his current responsibilities, he served as Europe downstream planning manager for Exxon Company International, finance director and controller of Esso Australia, upstream controller of Exxon Mobil Production Company, U.S.A., and general auditor of Exxon Mobil Corporation.

Mr. McElvy is a Trustee of the Eisenhower Fellowships, which sponsors U.S. internships for emerging global leaders. He also serves on the Executive Advisory Council at the University of Houston's Bauer College of Business and is a board member of the University of Houston Alumni Association. He is a board member of Reasoning Mind, an innovative, web-based middle school math program focused on improving math education and closing the achievement gap; and was recently appointed to the Board of the Texas Academy of Math and Science based at the University of North Texas.

Mr. McElvy is a member of Financial Executives International, the American Institute of Certified Public Accountants, and the Executive Leadership Council.

He has previously served as a board member of several education and community service organizations including the Texas Business and Education Coalition, Kappa Alpha Psi Foundation, the United Way of Texas Gulf Coast, Save the Tiger Council, Friends of Hermann Park, and Odyssey House, a chemical dependency recovery program for adolescents in Houston.

Mr. McElvy is a native of Ft. Worth, Texas. He earned a BBA degree in Economics and Accounting in 1975 from the University of Houston and completed an MBA in Finance from UCLA in 1977.