

National Association for Hispanic Education*

Hispanic STEM Initiative

SUMMARY

Up until the progress of the past few years, the state of Hispanic education had not changed substantially for decades. Yet, despite being the fastest growing segment of the U.S. population and the youngest in median age, Hispanic Americans continue to lag behind in almost every measure of educational attainment. At a time when America is losing ground to other countries in terms of academic achievement and in economic competitiveness, there is no better time than the present to mobilize the human assets that Hispanic Americans represent in order to restore and maintain the nation's prosperity.

This initiative will implement an aggressive five-year plan that mobilizes the nation's full and wide range of human and institutional assets for the expressed purpose of improving the education attainment of Hispanic students all along the educational pipeline, particularly in science, technology, engineering, and mathematics (STEM). The objectives of this initiative will be achieved through a collaborative network of public and private organizations highly committed to increasing:

1. The number of qualified math and science teachers in our classrooms;
2. The number of informed Hispanic parents, families, and communities involved in their children's education;
3. The number of Hispanic students graduating from high school academically prepared to undertake the rigors of a college education, and;
4. The number of Hispanic college graduates ready to pursue careers in the STEM fields.

The objectives of this initiative will be accomplished by building a national framework and infrastructure that comprises:

- a network of all stakeholder groups including: education associations and organizations; Hispanic-serving schools and school districts; institutions of higher education, particularly Hispanic-serving institutions; Hispanic STEM associations and organizations; corporate and Hispanic business sectors; community and faith-based organizations; early childhood development programs and services; parent and family involvement groups; teacher/educator associations and organizations, and; federal, state, and local governments
- an information sharing and communications network
- an assets bank and inventory of organizational capacities
- a public awareness campaign
- a knowledge base of Hispanic educational research, best-practices, and strategies for scaling up effective programs
- an advisory group that supports the implementation of the five-year plan

This initiative will not seek to duplicate existing programs or services. Instead, it will harness and channel existing stakeholder group assets and efforts toward increasing and expanding positive education outcomes for Hispanic Americans throughout the education pipeline – from pre-kindergarten to postsecondary education. Indeed, there has long-existed a wealth of assets in the form of human ingenuity, talent, expertise, and experience among the range of stakeholder groups operating throughout the country. The time has come to mobilize these assets in order to close the academic achievement gap for Hispanic students, once and for all. In the process, this comprehensive effort will help form a significant part of the solution that restores America's economic competitiveness by fulfilling the nation's need for talent in the STEM fields, now and for years to come.

Presently, we and the rest of the world are facing a severe economic downturn. The United States is now poised to make a heavy investment in its physical and financial infrastructures to stimulate a badly needed economic recovery. However, equal attention and investment must be devoted to cultivating the nation's human infrastructure. After all, a highly skilled and educated work force including engineers, mathematicians, and scientists will be needed to implement the investments going into building the nation's physical and financial infrastructures. This initiative will forge this network by implementing a five-year action plan that mobilizes the nation's vast reservoir of human and institutional assets to accelerate the production of that talent in the Hispanic community.

* The National Association for Hispanic Education is a component of the International Center for Higher Education & Philanthropy (ICHEP), established in 1995 as a nonprofit, tax-exempt 501(c)(3) Corporation.

Background

In 2002, a strong bi-partisan effort in Congress led to the passage of the No Child Left Behind Act that introduced education reform in our nation's public schools. Since then, several elements of education reform have begun to take root in classrooms across the country. The disaggregation of the academic performance of students by subgroup, for example, has served to unmask the persistent academic failure of low-income children, English Language Learners, minority students, and children with disabilities. Other elements of education reform such as early reading, parent and family involvement, and the call for more qualified teachers in the classroom set in motion renewed efforts to improve our public education system. Academic preparation—particularly in the core subjects of mathematics and science—emerged as an important outgrowth of education reform.

The emphasis on academic preparation in math and science was strengthened by the announcement of the American Competitiveness Initiative (ACI) in 2006, a comprehensive strategy designed to increase federal investment in critical research, ensure that the United States continued to lead the world in opportunity and innovation, and provide American children with a strong foundation in math and science. Subsequent legislation passed by Congress in 2007, as the *America COMPETES Act*¹, was designed to improve America's competitiveness in science, technology, engineering and mathematics through the academic components it authorized. The *College Cost Reduction and Access Act (CCRAA)*, in particular, provided Minority Serving Institutions \$510 million in new funding in fiscal years 2008-09 to spur the growth of minority students pursuing STEM fields. Of that amount, Hispanic Serving Institutions (HSIs)² were allocated \$100,000,000 in each of those two years to increase the number of Hispanic and other low-income students attaining degrees in STEM and to develop model transfer and articulation agreements between 2-year Hispanic Serving Institutions and 4-year institutions in these fields.

The important role that Hispanic Serving Institutions can perform in developing Hispanic talent in the STEM fields became the subject of a comprehensive conference convened in April 2007 at the University of Texas at El Paso (UTEP). This conference was enhanced by the participation of other long-standing Hispanic STEM associations, Hispanic-serving schools and school districts, federal agencies, high-tech corporations, the College Board, and the National Math-Science Initiative, among others. The purpose of the conference was to raise awareness about the key components of the American Competitiveness Initiative and to create a framework within which recommendations and strategies could be developed to respond to the challenges and opportunities that the ACI presented.

Speakers and panelists provided substantive and informative presentations about the nation's need for talent and innovative research in the STEM fields and the role that HSIs could play in meeting that need. The conference sessions addressed topics ranging from academic preparation, retention and graduation of more Hispanic students in the STEM fields to technology commercialization and the research needs of the private sector. Other sessions addressed an important ACI goal: the preparation of 100,000 additional teachers qualified to teach AP and IB mathematics, science and critical foreign languages by 2015, by providing professional development opportunities for current teachers and attracting new teachers to the classroom. Still other sessions emphasized the critical need for highly qualified teachers at every grade level, effective teacher-development programs, and effective schools of education.

Many attendees also emphasized that HSIs should establish or strengthen partnerships with K–12 schools, the business community, Hispanic science and technology associations, and even other institutions of higher education to help develop the capacity and infrastructure needed to meet the challenges and opportunities inherent in ACI. Many others contended that there was an urgency to work across sectors, from Pre-K through postsecondary institutions, to fully address the nation's critical need for talent and research.

¹ The *America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education and Science Act* (or the *America COMPETES Act*) was passed by Congress and signed by the president in August, 2007.

² A Hispanic-Serving Institution (HSI), as defined by the *Higher Education Act of 1965*, as amended, is an institution of higher education that has at least 25 percent Hispanic full-time equivalent (FTE) undergraduate student enrollment and provides assurances that not less than 50 percent of the institution's Hispanic students are low-income individuals.

Emergence of the Hispanic STEM Initiative

An important outcome of the conference was the emergence of a diverse working group of stakeholders, which included representatives from the corporate sector, HSIs, K–12 schools, Hispanic STEM associations, and nonprofit organizations that expressed the need to further engage in constructive dialogue to build on the momentum generated by the conference. This same working group convened again at the Competitive Crisis Council's (CCC)³ summit "California Is at Great Risk: Securing Our Competitiveness in a Global Market," held at California State Polytechnic University (Cal Poly Pomona) in September 2007. Conference sessions and speakers addressed the critical issues affecting the STEM community and the importance of producing scalable and measurable results that lead to positive education outcomes. A variety of workshops, aimed at elementary, middle and high school principals and teachers, addressed the need to increase parental involvement and to focus on STEM programs.

The working group convened twice more in 2008 to continue the dialogue about ways to work together along shared goals. The group expanded to include representatives from the Hispanic business sector, parental involvement groups, and grassroots science organizations. The group also explored ways to strengthen relationships with K–12 public schools and institutions of higher education to create seamless transitions for Hispanic students seeking to pursue STEM disciplines. At a meeting it held in December 2008 in Washington, DC, the working group agreed that it was critical to have a vehicle that would continue to work toward improving Hispanic STEM education and focus on delivering actions.

Advisory Committee

This, then, was the precursor to the formation of the Hispanic STEM Initiative. It held its inaugural meeting on March 28, 2009 in Albuquerque, NM. In a subsequent meeting, held at the University of Texas at Arlington on June 30, 2009, working subgroups were created to help develop the component areas drawn from the Hispanic STEM Initiative's five-year action plan. Now, an Advisory Committee is convening in its first meeting on September 14, 2009 in Washington, DC, to help implement the STEM components, listed below, in the months and years ahead.

The STEM component areas, listed below, will be implemented through the collaborative efforts of stakeholder groups and organizations under the guidance of the Advisory Committee in order to maximize and accelerate positive, evidence-based education outcomes for Hispanic students in STEM.

1. Families & Children – Implement effective efforts to increase the number of informed Hispanic parents, families, and communities involved in their children's education in STEM.
2. PreK-20 Partnerships – After identifying and documenting elements of high-performing Hispanic Serving Schools and School Districts, develop strategies to replicate and/or expand successful evidence-based models focused on STEM through the formation of PreK-20 partnerships.
3. Professionals in the Classroom – Implement strategies to train and place Hispanic STEM professionals in industry to teach and/or assist teachers of STEM subjects in "high need" Hispanic-serving schools and school districts⁴.
4. STEM Development – Draw on collaborative efforts among stakeholder groups to augment service coverage and to expand positive, evidence-based education outcomes through federal and corporate investments.
5. STEM Education & Research – Report on survey of stakeholder groups' STEM assets and capabilities by compiling information about number and type of constituents served, educational levels targeted, years of service, education outcomes produced, geographic region served, areas of staff expertise, and so on. Implement plans to issue first annual status report on progress and condition of Hispanic STEM education.
6. Teacher Education/Preparation – Identify institutions of higher education (IHE), particularly HSIs, which have effective schools of education and discuss strategies that expand the number of

³ The Competitive Crisis Council (CCC) is a coalition of corporations, educators and Hispanic engineering organizations dedicated to building a pipeline of qualified technical talent in the U.S.

⁴ For these purposes a "high need" Hispanic-serving school or school district is defined as one with low-income, high minority enrollment (Hispanic) and a significant proportion of English Language Learners.

qualified graduates and teaching professionals with the cultural competency needed to teach math and science in high need Hispanic Serving Schools and School Districts.

7. Career and Workforce Development – Describe the framework for career and workforce development that reflects the literature in the field and education pathways to STEM careers; map existing programs to this framework to identify gaps and overlaps; and identify/share culturally relevant resources that support the career and workforce development of Hispanic youths.

“There has long-existed a wealth of assets in the form of human ingenuity, talent, expertise, and experience among a range of stakeholder groups and organizations, particularly Hispanic, throughout the country.” The Hispanic STEM Initiative Advisory Committee will draw on these assets to form collaborative efforts that increase and expand positive education outcomes in STEM disciplines for Hispanic students throughout the education pipeline – from pre-kindergarten to postsecondary education. In the process, its success will advance efforts that form a significant part of the solution that restores America’s economic competitiveness by fulfilling the nation’s need for talent in the STEM fields.

Members of the Hispanic STEM Initiative Advisory Committee are listed below:

Mike Acosta
National President
Society of Mexican American Engineers and Scientists (MAES) and
Director of the FUMEC Border Office (US – Mexico Foundation for Science)
El Paso, TX

Maite Arce
Senior Programs and Policy Director
Self Reliance Foundation
Washington, DC

Anna Escobedo Cabral
Senior Advisor, External Relations
Inter-American Development Bank
Washington, DC

Diana Gomez
Chair
AHETEMS
Los Angeles, CA

Jorge Haynes
Senior Director, External Relations
California State University System, Office of the Chancellor
Long Beach, CA

Maria Esther Lopez
Director, Institutional Advancement & Latino Leadership Connections Project
El Valor
Chicago, IL

Ray Mellado
Chair & CEO
HENAAC
Los Angeles, CA

Nora Ramirez
President
TODOS: Mathematics for All
Tempe, AZ

Marta E. Sanchez
Assistant Dean, Clinical Education
School of Education
Loyola Marymount University
Los Angeles, CA

David Valladolid
National President & CEO
PIQE-Parent Institute for Quality Education
San Diego, CA

About the National Association for Hispanic Education (NAHE)

The mission of NAHE is to promote and ensure the success of Hispanic students at all educational levels—from early childhood and elementary schooling through collegiate and professional education—across all 50 states and the Commonwealth of Puerto Rico. In fulfilling its mission, NAHE will forge a national network of stakeholder groups and organizations in a collaborative effort to transform the future of Hispanic education--beginning with the implementation of a five-year action plan that maximizes Hispanic educational achievement in the science, technology, engineering, and mathematics (STEM) fields. This is the purpose of the NAHE’s Hispanic STEM Initiative.

Hispanic STEM Initiative Network

Organizations that presently comprise the Hispanic STEM Initiative network are listed below:

Association of Latino Administrators & Superintendents (ALAS)
California State Polytechnic University, Pomona
California State University System, Office of the Chancellor
EarthSky Communications, Inc.
Education Development Center, Inc.
El Valor
ENLACE New Mexico
ExxonMobil Corporation
Florida International University
HENAAC
Hidalgo Independent School District
Hispanic Heritage Foundation
Inter-American Development Bank
ListoAmerica, Inc.
Loyola Marymount University
Manual Arts High School

New Mexico Tech
Society of Mexican American Engineers & Scientists (MAES)
Parent Institute for Quality Education (PIQE)
SACNAS-SHPE-MAES Consortium
Self Reliance Foundation
Society of Hispanic Professional Engineers, Inc. (SHPE)
Society for the Advancement of Chicanos and Native Americans in Science (SACNAS)
Texas Higher Education Coordinating Board
The Boeing Company
The College Board
The University of Texas at El Paso
TODOS: Mathematics for All
U.S. Department of Energy
US-Mexico Foundation for Science (FUMEC)
X1 Technologies
U.S. Hispanic Chamber of Commerce

Mobilizing Resources and Assets in the U.S.

These resources represent just some of the human and institutional assets—stakeholder groups and organizations with the experience, commitment and vested interest to improve education outcomes for Hispanic children and youths. They comprise early childhood development programs, the Hispanic faith-based community, Hispanic serving institutions of higher education, K-12 public schools, Hispanic STEM associations, the private sector, and the enduring values and strengths inherent in the Hispanic family. They all form the reservoir of important assets from which the Hispanic STEM Initiative will draw to improve Hispanic academic achievement. And, because no one entity can do it alone, many of these stakeholder groups understand that they must collaborate to accelerate the production of Hispanic talent in the STEM fields.

