

**FINAL REPORT**

**Spring 2010 Workshop on the  
Recruitment and Retention of  
Hispanic Male Students in Science,  
Technology, Engineering and  
Mathematics (STEM)**

**SEPTEMBER 2010**

**Prepared by  
The Quality Education for Minorities (QEM) Network  
Washington, DC**

# HISPANIC MALES IN STEM

## ABOUT THE WORKSHOP SERIES

The Quality Education for Minorities (QEM) Network conducted three workshops focused on increasing the enrollment and retention of minority males in Science, Technology, Engineering, and Mathematics (STEM). The first workshop was held in Atlanta, Georgia, on March 19-20, 2010, with a focus on African American males; the second workshop was held in Las Vegas, Nevada, on March 26-27, with a focus on Hispanic males; and the third workshop was held on April 9-10, in Albuquerque, New Mexico, with a focus on Native American (American Indian/Alaska Native/ Native Hawaiian) males.

The goals of the workshops were to: (1) identify effective strategies and best practices for increasing male student enrollment and retention at minority-serving institutions (MSIs) in STEM; (2) identify potential reinforcing pipeline options; and (3) prepare and disseminate a summary report on the best practices and key findings discussed during the workshops.

### Workshops' Participants

Generally, each workshop's institutional participants were comprised of two-member teams. Each team included a STEM faculty member actively involved in advising and mentoring STEM students and a student services staff member with recruitment and retention responsibilities. Consultants with relevant research experience and practitioners who have led successful strategies for addressing male underrepresentation in higher education, including in STEM fields, discussed their findings, lessons learned, and recommendations for potential next steps.

A total of 70 persons, representing 34 institutions and one professional organization, attended the workshops. This includes 24 persons, representing 11 institutions, who attended the workshop on African American males; 32 persons, representing 16 institutions, who attended the workshop on Hispanic males; and 14 persons, representing eight (8) institutions and one professional organization, who attended the workshop on American Indian/Alaska Native/Native Hawaiian males.

Presenters and participants in each of the three workshops identified common as well as distinct challenges related to the enrollment and retention of males in STEM disciplines for the respective targeted groups (African Americans, Hispanics, and Native Americans). They also recommended strategies for addressing these challenges. QEM prepared separate reports for each of the three workshops. Drafts of the reports were sent to workshop participants for their feedback. The summary reports in this document reflect this feedback.

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# HISPANIC MALES IN STEM

## **Quality Education for Minorities (QEM) Network Workshop on the Recruitment and Retention of Hispanic Male Students in Science, Technology, Engineering, and Mathematics (STEM) Las Vegas, NV • March 26-27, 2010**

### **Introduction**

The Quality Education for Minorities (QEM) Network, through support from the National Science Foundation (NSF), conducted a workshop focused on increasing the enrollment of Hispanic males in Science, Technology, Engineering, and Mathematics (STEM). The workshop, held in Las Vegas, Nevada, on March 26-27, 2010, was the second in a three-part series focusing on minority males. The first workshop, with a focus on African American males, was held in Atlanta, Georgia, on March 19-20, 2010. The third workshop, held on April 9-10, 2010, in Albuquerque, New Mexico, focused on American Indian/Alaska Native/Native Hawaiian males.

The goals of the Las Vegas workshop were to: (1) identify effective strategies and best practices for increasing male student enrollment in STEM at Hispanic-serving Institutions (HSIs); (2) identify potential reinforcing pipeline options; and (3) prepare and disseminate a Summary Report on the best practices and key findings discussed during the workshop.

The workshop institutional participants were comprised of two-member teams from each of sixteen (16) Hispanic-serving Institutions (HSIs). Each team consisted of a STEM faculty member actively involved in advising and mentoring STEM students and a student services staff member with recruitment and retention responsibilities. Consultants with relevant research experience and practitioners who have led successful strategies for addressing male under-representation in higher education, including in STEM, discussed their findings, lessons learned, and recommendations for potential next steps.

### Participating Institutions

The participating institutions in the Las Vegas workshop are listed below.

California State University, Long Beach	South Texas College
California State University, Los Angeles	Texas A&M International University
Chaffey College	Texas A&M University-Kingsville
Colorado State University-Pueblo	The National Hispanic University
Los Angeles Harbor College	Universidad Del Este
Northern New Mexico College	University of Houston-Downtown
Pasadena City College	University of New Mexico Valencia Campus
San Diego City College	University of Texas at Brownsville

## HISPANIC MALES IN STEM

### Institutional Teams' Current Recruitment/Retention Strategies Based on Responses to Questions on the Enrollment of Hispanic Males

QEM asked participants prior to their coming to the workshop to respond to two questions regarding their current strategies for recruiting and retaining Hispanic males in STEM.

**Question 1:** What initiatives/strategies have been/are being used currently at your institution to increase male enrollment?

**Question 2:** What does your institution hope to gain from your participation in the workshop?

The questions and the responses from institutional teams are at **Appendix A**.

**FRIDAY, MARCH 26, 2010**

### **Overview of Research Findings to Date (Data/Lessons Learned) on STEM Participation and Achievement of Hispanic Males**

Dr. Carlos Rodriguez, Principal Research Scientist for the American Institutes of Research, and QEM Workshop Consultant presented an overview of data and research findings related to Hispanic Males in STEM.

In 2008, the percentage of 25-to-29-year olds (Hispanics, Blacks, Whites, and Asian/Pacific Islanders) who had a high school diploma or equivalent is given in the following table:

<b>Race/Ethnicity</b>	<b>Male</b>	<b>Females</b>
Hispanic	66%	72%
Black	86%	89%
White	93%	95%
Asian/Pacific Islander	96%	96%

Source: U.S. Census Bureau, Current Population Survey (CPS), March Supplement, Selected Years, 1971-2008

Note that Hispanic males have the lowest high school graduation rates among all the groups shown. They are 20 percentage points behind Black males and 27 percentage points behind White males.

Other indicators of the educational status of Hispanic males include the number of associate's, bachelor's, and graduate degrees earned. The following tables provide degree data that compare Hispanics with Blacks, Whites, and Asian/Pacific Islanders.

## HISPANIC MALES IN STEM

### Associate's Degrees Awarded to Men and Women, by Race/Ethnicity, 1976-77 and 2006-07

Race/Ethnicity	1976-77		2006-07	
	Men	Women	Men	Women
Hispanic	9,105	7,531	31,646	53,764
Black	15,330	17,829	28,273	63,256
White	178,236	164,054	191,565	300,007
Asian/Pacific Islander	3,630	3,414	15,510	21,756

Source: National Center for Education Statistics, Integrated Postsecondary Education Data System

According to the table above, while the number of Hispanic men earning Associate's degrees more than tripled over the thirty-year period 1977-2007, the number of Hispanic women receiving these degrees increased by more than seven times over the same period. The table also shows that significant increases occurred for all racial/ethnic groups in the number of women earning Associate's degrees over the thirty-year period.

The table below provides data on bachelor's degrees by gender and race/ethnicity.

### Bachelor's Degrees Awarded to Men and Women, by Race/Ethnicity, 1976-77 and 2006-07

Race/Ethnicity	1976-77		2006-07	
	Men	Women	Men	Women
Hispanic	10,318	8,425	44,750	70,186
Black	25,147	33,489	49,685	96,968
White	438,161	369,527	480,558	619,292
Asian/Pacific Islander	7,638	6,155	47,582	57,715

Source: National Center for Education Statistics, Integrated Postsecondary Education Data System

While the number of Bachelor's degrees to Hispanic men increased more than fourfold during the thirty-year period, 1977-2007, Bachelor's degrees to Hispanic women increased nearly seven-fold. The gap in Bachelor's degrees earned by Hispanic men and women grew from 1,893 (in favor of men) in 1976-77, to 25,436 (in favor of women) in 2006-07.

*Key Points from Remarks by Speaker Dr. Carlos Rodriguez*

Dr. Rodriguez noted that:

- Females, generally, are doing better than males in all sectors;
- At the undergraduate level, Hispanic women are eight points higher in graduation rates than Hispanic males and all indications are that this gap will increase;

## HISPANIC MALES IN STEM

- In the 2009 National Assessment of Educational Progress (NAEP), females scored higher than males in 4<sup>th</sup> grade across all groups;
- The gaps between white and Hispanic students are smaller in Hispanic-serving Institutions (HSIs); and
- Hispanic women graduate at consistently higher rates than Hispanic men and often graduate at the same rate as white men in their schools.

### Observations

Dr. Rodriguez made several observations related to STEM participation for Hispanic males, including the following:

- Latino STEM undergraduate persistence is sustained by strong family ties and support structures;
- Hands-on research, advising, mentoring, and social integration with faculty are interventions that make a difference in the persistence of Hispanic males in STEM and are relatively easy to implement;
- Starting from the same playing field for boys and girls may not be the right approach;
- Seventy percent (70%) of Hispanics live in two states (California and Texas) and in Puerto Rico;
- Prisons siphon males away from higher education in big numbers;
- The number of persons trained in STEM is inadequate to meet the nation's STEM needs;
- STEM professionals drive 60% of the Gross National Product (GNP);
- Mentoring has a major impact on students' sense of self, and perception of self is a critical factor in students' success;
- Student success is influenced by faculty attitudes and pedagogical practices; and
- Quality instruction promotes persistence.

According to Dr. Rodriguez, HSIs must revisit and rethink the notion of integration and mainstreaming into "college life" for a minority student. Minority students are vital links for the betterment of their families and siblings. Thus, their motivation to attend college is necessarily sustained by strong family ties. This further suggests that STEM interventions should explore ways to engage the families of Hispanic male students in activities that generate support for their sons.

## HISPANIC MALES IN STEM

### Summary of Key Recommendations from Participants

The observations noted above from Dr. Rodriguez' presentation, which was entitled *STEM AND HISPANIC MALES - What's the Problem?* as well as the subsequent presentations and audience discussions, provided an overview of some of the issues and factors contributing to the under-representation of Hispanic males in STEM. These issues include:

- Lack of faculty buy-in for greater involvement of Hispanic males in STEM
- Poor counseling -- students advised not to take college preparatory courses, especially in mathematics; many counselors not very knowledgeable about the opportunities available to STEM graduates.
- Deficit model approaches that blame students and avoid institutional responsibility
- Limited financial support
- Limited access to mentors and role models
- Influences on Hispanic males from families, friends, and community
- Perception of self, which is a critical factor in a student's academic success
- Pedagogical practices and lack of teacher support

During the Workshop's plenary and concurrent sessions, participants suggested a number of strategies to address the issues and made the following recommendations:

- Include students in hands-on experiences in STEM learning activities
- Involve students in summer informal science experiences and science-based competitions
- Include activities that involve a student's family
- Allow for pre-college students to have some interaction with STEM college faculty
- Include incentives such as scholarships for students to pursue a STEM education
- Provide STEM-focused work opportunities for STEM students on or off campus
- Provide opportunities for precollege students to experience academic culture at the college level
- Improve the system for advising potential and current STEM students
- Consider STEM curricula that emphasize depth vs. breadth in STEM courses

Participants also recommended that each institutional initiative consider having the following:

- 1) A peer tutoring component;
- 2) Cooperative learning groups;
- 3) An award for outstanding faculty mentoring; and
- 4) A strong marketing plan to students.

## HISPANIC MALES IN STEM

### **A Best Practice: Use of Data to Inform Program Interventions**

*Key Points from Remarks by Speaker Dr. Alicia Dowd*

Dr. Alicia Dowd, Associate Professor and Co-Director of the Center for Urban Education (CUE) at the University of Southern California, discussed the use of data to inform program interventions. Dr. Dowd noted that there is a lack of faculty buy-in for greater involvement of Hispanic males in STEM. She cited a number of barriers faced by Hispanic males related to their participation in higher education. The statements made by potential students state: “I may not succeed.” “I will work hard, but still not receive a pay-off.” “I will have to act in a way that is not me.” Dr. Dowd reminded the group that the problem has been placed on the student rather than on other causes and that data should be used to reframe the issues. She emphasized that one should look at where students are being lost and look beyond the numbers.

Dr. Dowd mentioned that a big problem exists with the counseling of students. A number of counselors advise students not to take college preparatory courses, especially in mathematics, and also a significant group of counselors are not very knowledgeable about the opportunities available to STEM graduates. As a result, the academic pipeline includes a disproportionate number of students who are not prepared to do college-level work upon graduation from high school. Dr. Dowd pointed out that at times aggregate numerical data hide race-based inequities and that data should be sufficiently disaggregated to reveal these inequities. The CUE Equity Model used by Dr. Dowd and her colleagues reframes the problem of student success to move beyond deficit model approaches that blame students and avoid institutional responsibility.

### **Effective Strategies and Best Practices in the Recruitment and Retention of Hispanic Males**

*Key Points from Remarks by Speaker Dr. Mark Hernandez*

Dr. Mark Hernandez is Associate Professor, Department of Civil, Environmental, and Architectural Engineering, and Director of the Colorado Diversity Initiative, at the University of Colorado, Boulder. In his remarks, he noted that Hispanic males have few real connections to their chosen fields of study. He emphasized that majority groups have a systemic network of mentors that result in less demand on the student and is low risk, whereas minority groups have an episodic network of mentors that is high risk. According to Dr. Hernandez, as a consequence, when access by Hispanic males to pools of mentors is diminished, other influences on the males are amplified, including those from families, friends, and significant others. He also mentioned that the U.S. Military is “putting on a full court press” for minority talent that academics cannot effectively compete for at critical transitions.

Dr. Hernandez discussed the NSF Alliance for Graduate Education and the Professoriate (AGEP) program at the University of Colorado and how the program relates to issues of diversity. He suggested the following strategic actions for AGEP and STEM faculty at his university:

## HISPANIC MALES IN STEM

- Leveraging AGEP funding to secure additional resources and aligning AGEP efforts with other federally funded training grants;
- Establishing relationships with program administrators at federally-funded “feeder” programs;
- Actively involving faculty in the recruitment, retention, mentoring, and career preparation of underrepresented doctoral students;
- Establishing widely shared communication networks among graduate students and faculty; and
- Advancing recent Ph.D. recipients into academic careers through special postdoctoral fellowships.

### **Key Points from Concurrent Group Discussions**

QEM divided the participating teams into four concurrent groups to discuss their current initiatives regarding Hispanic males along with any change in strategies they intended to make based on insights they received during the workshop.

#### **Group I**

The institutions in Group I were California State University, Los Angeles; California State University, Long Beach; Chaffey College; Pasadena City College.

#### *Key Points from Group I*

The group discussed moving from a silo to an interdisciplinary approach in addressing the Hispanic Males Initiative. It recognized the importance of using peer groups, hands-on STEM-related activities, and bridge programs as strategies for attracting more Hispanic males to STEM. The Group suggested that “pools” of community supporters be created to support the Initiative. Members also emphasized the role of professional development and the need to have more counselors who are trained to provide well-informed and unbiased advice to students regarding opportunities and requirements for STEM-related careers.

#### **Group II**

The institutions in Group II were Los Angeles Harbor College, Northern New Mexico College, The National Hispanic University, and the University of New Mexico Valencia Campus.

#### *Key Points from Group II*

##### **Los Angeles Harbor College**

The College has connections with two local high schools that are 100% Hispanic and African American. Tutors are trained to work with the students in a series of workshops that focus on engineers and what they do. Parents and families also are involved in discussions about students’ careers in science and technology. The College has counselors on board who

## HISPANIC MALES IN STEM

can work with the students regarding the academic requirements for science and engineering majors.

### **Northern New Mexico College**

Engineering faculty members are assigned a cohort of students, and the faculty receive training in student advisement. The College has an early alert system for students having academic difficulties.

### **National Hispanic University**

University faculty members have taken students to professional meetings, offered on line courses, sponsored field trips, communicated with the family of students, and emphasized that education is an investment in the future. Peer tutors attend the classrooms of the students they tutor and, currently, are compensated through a grant to the University. The tutors have self-confidence they can do the work required of them. The areas of greatest concern for the tutors are mathematics and English.

### **University of New Mexico Valencia Campus**

Representatives of the University are holding meetings with the mathematics faculty at local high schools. The State of New Mexico now requires four years of mathematics for graduation. The University plans to survey selected high school students to find out their career goals and mathematics backgrounds and will work with the schools to see that students are properly advised regarding which mathematics courses they should take.

### **Group III**

The Group III institutions were South Texas College, Texas A&M International University, Texas A&M University-Kingsville, and University of Texas Brownsville.

#### *Key Points from Group III*

All the Group III institutions are located in Southwest Texas, along the U.S. border in the Rio Grande Valley. The Group proposed a joint effort, “The South Texas Border STEM Collaborative for Hispanic Males.” The goal of the Collaborative is to increase participation of Hispanic males in the South Texas STEM workforce, both in industry and academe. The Collaborative will address factors to increase the participation of Hispanic males at the high school, undergraduate, and graduate levels.

Strategies to address critical elements will include providing financial support through scholarships, formation of cohort groups of STEM students across the Collaborative by STEM discipline. The students will use distance education and participate in group activities, peer tutoring, and outreach to high schools. The Collaborative also will provide information to the families of STEM students about education and employment opportunities. Faculty will receive training on the mentoring of Hispanic males in STEM and in helping these males pursue graduate degrees in STEM.

The Group discussed a number of challenges that need to be considered. For example, Hispanic males do not want to leave the South Texas border area, and the Collaborative will need to focus on local workforce development, including in academe. The Group emphasized that early commitment to STEM, the involvement of high school students in dual enrollment

## HISPANIC MALES IN STEM

programs, and financial support are essential. They noted that students should be involved in community service projects that show a knowledge of STEM can help improve their communities.

Members of the group agreed to develop a timetable for pursuing the Collaborative. Their immediate tasks include:

- Gathering demographic and workforce projections for the South Texas border area;
- Identifying key personnel at each institution with whom to discuss the Collaborative idea;
- Developing a one-page project summary to be used in disseminating information about the Collaborative concept; and
- Setting up a listserv for the workshop teams to continue their discussion and planning.

### **Group IV**

The institutions in Group IV were Colorado State University-Pueblo, San Diego City College, Universidad Del Este, and University of Houston-Downtown. Each team described its initiative or its plans for the development of an initiative.

#### *Key Points from Group IV*

#### **Colorado State University (CSU)-Pueblo**

The CSU-Pueblo team currently does not have a Hispanic Male Initiative on campus. The team came to the workshop to learn about and begin the development of a new initiative. An “Early Alert” program on campus for all students seems to be working well. The CSU-Pueblo team will identify existing programs on campus and will target the family as a unit. A Mentoring Award for Faculty will be created. This will begin with a Recognition Award for STEM faculty. The team will identify a “Key Opinion Leader” at each of the participating high schools and bring these leaders to campus and begin working with them to improve the overall recruitment program. Identification of role models also will be a major component of the new initiative.

#### **San Diego City College**

The College currently has a very effective MESA Program with 200 participating students, 60% of whom are male. There is also a “Brothers United Group” on campus. The team proposes to create an 8-week Summer Enrichment Program for 20 Hispanic male students. The Chemistry Department has a peer team learning program that will be expanded to other disciplines. The team proposes to use the “Key Opinion Leaders” as a strategy. This will involve identifying the Leaders and working through them to engage other Hispanic males. An 8-week summer program for incoming freshmen will be developed that will involve parents and other family members.

#### **Universidad Del Este (Puerto Rico)**

The University has about 400 students; and has RISE and MBRS programs on campus. Currently the campus does not collect data with respect to gender. The team indicated that the major barrier they faced in developing an initiative is financial. The University also has a

## HISPANIC MALES IN STEM

great deal of competition for students from other Universities. A need exists for the development of a strong marketing program for male students.

### **University of Houston-Downtown**

The team from the University of Houston Downtown described two initiatives. One involves a two-week Summer Session for high school seniors. The focus was on integrating students into the college experience. Participating students were paid, and incoming freshmen received scholarships. The initiative is funded through various sources, including private foundations, University funds, and in-kind contributions from school districts.

The second initiative that the team described was “Houston Prep.” This initiative focuses on economically disadvantaged high school rising juniors and seniors. A major emphasis is on dual enrollment of the participating students where they receive college credit for classes taught at their high schools by college faculty.

The team proposes to modify its existing initiative by adding the recruitment of more Hispanic males and adding a service component for participants receiving STEM scholarships. The University will take Hispanic males from the campus to high schools to help recruit Hispanic males. It also will add a half-time STEM recruiter (regular recruiters have little knowledge of how to recruit STEM students).

### Development of Innovative and Creative Enrollment and Support Strategies in STEM at Critical Junctures Along the Educational Pathway

#### *Key Points from Remarks from Panelist Dr. Lorelle Espinosa*

Dr. Lorelle Espinosa is Director of Policy and Strategic Initiatives at the Institute for Higher Education Policy (IHEP), and QEM Consultant. Dr. Espinosa spoke about the relevance of STEM content to the real-world and noted that Hispanic male students are interested in STEM that they can apply to their home communities. Some of the males do not want to participate in study groups because they believe they would be stigmatized by being seen as a minority student and, in some cases, the only minority student in the group. Dr. Espinosa mentioned a 2008 study focused on self-concept in which it was found that perception of self is a critical factor in a student’s academic success. The study also found that mentoring, faculty attitudes, and pedagogical practices are strong influences on student self-perception. Dr. Espinosa suggested the creation of a network across campus in which students can tap into a variety of persons who can provide assistance.

#### *Key Points from Remarks from Panelist Dr. Victor Saenz*

Dr. Victor Saenz is Assistant Professor of Educational Administration at the University of Texas at Austin, and QEM Consultant. He cautioned that one should be careful not to adopt a

## HISPANIC MALES IN STEM

lens that assigns blame as a result of a student's gender, culture, language, or ethnicity. Dr. Saenz looked at conditions at critical junctures along the education pathway and discussed their impacts on Hispanic males.

### At the elementary school level:

- A need exists to support expansion of new elementary schools built around open-use concepts that emphasize learning through technology that focuses on mathematics and science education;
- More than 80% of elementary teachers across the country are White women;
- More encouragement and support should be provided for Latino teachers in the early grades;
- The social stigma of being a male teacher in the early grades should be addressed;
- By third grade, Latino boys are, on average, a year to a year and a half behind girls in reading and writing skills, but they are about equal to girls in mathematics, based on NAEP scores;
- Boys are twice as likely as girls to be labeled as "learning disabled" and seven times more likely than girls to be diagnosed with attention deficit disorder; and
- Boys constitute up to 67 percent of students in special education.

### At the middle school level:

- Significant numbers of Latino males have been labeled "at risk;"
- Some have not gotten along with their teachers and increasingly see teachers as the enemy;
- Some are stigmatized by being singled out as learning disabled and not smart; and
- Boys in grades four through eight are twice as likely as girls to be held back.

### At the high school level:

- Among 16 to 24 year-old *Latino males in 2007*, the proportion of high school dropouts was 24.7 percent compared to 18.0 percent for Latina females; and
- Expectations for the young Latino male to work and contribute to the family's well-being remains a salient feature and pressure source.

In summarizing the K-12 experience for Latino males, Dr. Saenz observed that: young Latino males are more likely to attend schools with high racial/ethnic minority student populations; the schools they attend are more likely to be under-resourced, under-staffed, racially segregated, and poverty stricken. He pointed out that these inequities have resulted from years of unequal distribution of school funding, under-prepared teachers, high teacher turnover, the flight of affluent families to suburban schools, and poor administrative leadership. Generally, Latino male students who drop out of high school go straight into the workforce, go into the military, or go into prison.

## HISPANIC MALES IN STEM

The gender gap between Latino males and Latina females continues into higher education. According to Dr. Saenz, if this gap persists and grows, it will have significant negative impacts. These include economic impacts in which Latinos could become a permanent underclass and the future livelihood of Latino/a communities in STEM would be threatened. The economic impacts could have serious implications for the U.S. global competitiveness in science and technology and the research and teaching capacity of U.S. institutions of higher education.

### **SATURDAY, MARCH 27**

#### **Replication Techniques and Processes for Implementing Hispanic Male Initiatives – Translating Methods that Demonstrate Successful Outcomes into Evidenced-Based Practice**

*Key Points from Remarks by Speaker Dr. Lorelle Espinosa*

Dr. Espinosa discussed replication techniques and processes for implementing Hispanic Male Initiatives. She mentioned the NSF-supported Models of Institutional Excellence (MIE) program as an example of a model that was replicated at several institutions. Dr. Espinosa emphasized that that different factors need to be in place to support student success and that campuses need to be ready for change. Key steps in making change include ensuring that campus administrators are on board, faculty members are on board, identifying what the institution is doing well, and what are the institutional barriers to change. Dr. Espinosa suggested that an interdisciplinary rather than a “silo” model be used in establishing and replicating an initiative. She pointed out that essential elements of the replication should include data on “best practices.”

#### **Facilitating/Inhibiting Factors in Program Implementation and Lessons Learned**

*Key Points from Remarks from Speaker Dr. Victor Saenz*

Dr. Saenz stated that there is a need to look at the economic impact of the underrepresentation of Hispanic males in STEM. He pointed out that this situation could result in higher unemployment for Hispanic males and a negative socio-cultural impact across the board. He noted further that it would be difficult for males to serve their expected roles. Dr. Saenz asked, “What can be done and how can we get more buy-in to address the issue”? He said that it is a must that one understands the challenges and continue to build a culture of evidence to surmount the challenges.

Dr. Saenz remarked that the Hispanic Male Initiative should extend beyond a single institution by finding creative ways to reach out and by building a culture of support for the long haul. He suggested that the outreach and support begin with the student’s family. He also suggested that potential community support exists in the form of small businesses and role models. According to Dr. Saenz, change in people and priorities are keys to successful program implementation. He emphasized that leadership should be out front, not merely on board. Lessons learned include the following:

## HISPANIC MALES IN STEM

- Student should have a reframing of scientists (what do scientists, how they do it, who or what is affected by their work);
- Discussions with students about STEM should occur early (in the primary grades);
- Greater involvement of trained mentors is needed;
- Institutional commitments across the campus must be made if the Initiative is to be successful;
- Learn more about why Latina females are doing better than males in STEM and use this information to help guide the Male Initiative; and
- Identify and borrow model programs that have been successful under similar conditions.

### **Potential Sources of Support: Federal and Private Foundations/Corporations**

#### *Key Points from Remarks from Speaker Ms. Marilyn Suiter*

Ms. Marilyn Suiter is Program Director for Special Activities, Division of Human Resource Development, Directorate for Education and Human Resources, at the National Science Foundation.

Ms. Suiter provided an overview of the National Science Foundation (NSF), including its organizational structure, and described opportunities for support available through various programs at NSF. Some of the programs she mentioned were:

- S-STEM: Scholarships in Science, Technology, Engineering, and Mathematics
- Research on Gender in Science and Engineering
- Advanced Technological Education (ATE)
- Faculty Early Career Development Program (CAREER)
- The Robert Noyce Teacher Scholarship Program
- Transforming Undergraduate Education in Science (TUES), formerly Course Curriculum and Laboratory Improvement (CCLI)
- STEP: Science, Technology, Engineering, and Mathematics Talent Expansion Program
- REU: Research Experiences for Undergraduates Program
- I-cubed: Innovation for Institutional Integration

Ms. Suiter also described the Discovery Research K-12 (DR K-12) Program that encourages proposals that consider new and innovative ways to educate students and teachers.

Dr. Costello Brown led the discussion of funding opportunities available at other federal agencies and private foundations. The potential funding sources document at **Appendix C** of this report contains an overview of this discussion.

## HISPANIC MALES IN STEM

The Workshop Agenda is provided at **Appendix B** while a list of participants, including panelists and speakers, is at **Appendix D**.

# HISPANIC MALES IN STEM

**Quality Education for Minorities (QEM) Network  
Workshop on the Recruitment and Retention of Hispanic Male Students  
in Science, Technology, Engineering, and Mathematics (STEM)  
Las Vegas, NV • March 26-27, 2010**

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## APPENDICES

Appendix A: Responses from Participating Institutions to Pre-Workshop Questions

Appendix B: Hispanic Males Workshop Agenda

Appendix C: Funding Resource Guide

Appendix D: List of Workshop Participants

# HISPANIC MALES IN STEM

## APPENDIX A:

### Responses from Participating Institutions to Pre-Workshop Questions

#### **California State University, Long Beach**

##### ***What initiatives/strategies have been/are being used currently at your institution to increase male enrollment?***

Strategies that we currently have are freshman orientation and advising, peer mentor programs, minority programs that include NIH-MARC, RISE, and Bridges to the Baccalaureate, Noyce, AMP, and McNair Scholars Program. The College of Natural Sciences and Mathematics also has a dedicated staff in our Jensen SAS (Student Access to Science) Center. Programs that are institutionalized HSI-Mi Casa: Mi Universidad for first generation Hispanic students, Special Recruitment and Retention Initiatives for Students, and Partners for Success. We also do some community outreach to our neighbor community colleges.

##### ***What does your institution hope to gain from your participation in the workshop?***

Acquaint ourselves with new strategies that we either do not know or have not adopted because of a lack of funding. What strategies can we use to get all faculty on board on addressing this challenge of increasing the number of Hispanic males who are interested and can ultimately get retained in STEM; any strategies on more effective mentoring. Overall get an overview of why we have such a problem and how to address it so that our team can disseminate to STEM faculty and administrators at our institution.

#### **California State University, Los Angeles**

##### ***What initiatives/strategies have been/are being used currently at your institution to increase male enrollment?***

We have both a MESA Schools Program and MESA Engineering Program that are pipeline programs designed to increase the recruitment and retention of educationally and economically disadvantaged students into the STEM field. Also, in our college we have a Director of Outreach and Recruitment.

##### ***What does your institution hope to gain from your participation in the workshop?***

We plan to learn how to become more effective in recruitment and also retention. Moreover, we would like to learn about more researched-based practices that have proven results of decreasing time-to-graduation.

#### **Chaffey College**

##### ***What initiatives/strategies have been/are being used currently at your institution to increase male enrollment?***

Outreach to High Schools, Online-to-College, Summer Science and Robotics Academies.

##### ***What does your institution hope to gain from your participation in the workshop?***

Best Practices of other Institutions regarding recruitment of underrepresented minorities in STEM

## HISPANIC MALES IN STEM

### **Colorado State University-Pueblo**

#### ***What initiatives/strategies have been/are being used currently at your institution to increase male enrollment?***

- Hosting of the Engineering, Science and Technology Design Contest, targeting Middle and High Schools of the Southern Colorado Area
- Development of presentations, flyers, brochures and other educational material to promote enrollment in STEM related disciplines
- Visit to Science fairs, Career Fairs and other educational events involving Elementary, Middle and High School students of the Southern Colorado Area
- Invited Speakers to Middle and High School classes to promote enrollment in STEM related disciplines
- Member of the Colorado Alliance for Minority Participation aimed to at least double the number of underrepresented students successfully completing baccalaureate degrees in STEM related disciplines
- Hosting the Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) program to support talented, financially needy students in STEM related disciplines

#### ***What does your institution hope to gain from your participation in the workshop?***

- To recognize, understand and identify the implementation mechanics of the state-of-the-art initiatives to recruit and retain Hispanic males in STEM disciplines that will suit best our school profile
- To gain insights on how to identify success factors in deploying initiatives to recruit and retain Hispanic males in STEM disciplines based on our school profile
- To gain insights on how to design and deploy short, medium and long term policies and strategies to recruit and retain Hispanic males in STEM disciplines based on our school vision, mission and resources
- To network with other schools facing the same struggle with the recruitment and retaining of Hispanic males in STEM disciplines, aiming to identify key elements in the processes based on past and current experiences.

### **Northern New Mexico College**

#### ***What initiatives/strategies have been/are being used currently at your institution to increase male enrollment?***

Besides traditional methods of recruitment including college fairs and presentations we are utilizing the web and tools such as Facebook and Tweeting. We utilize Banner and the recruitment modules within Banner to generate letters and keep track of where students are in their decision-making process when selecting a college/university. We also partner with many community-based organizations in order to get the word out about our programs.

#### ***What does your institution hope to gain from your participation in the workshop?***

We hope to brainstorm and come away with new strategies for recruitment and especially retention of Hispanic males on our campus.

## HISPANIC MALES IN STEM

### **Pasadena City College**

***What initiatives/strategies have been/are being used currently at your institution to increase male enrollment?***

Currently we have several active programs, including the NSF-STEP MaS (more math and science) program that increases STEM majors in under-represented student populations; the MESA program; and massive outreach associated with our XL Summer bridge XL programs; Science internships etc.

***What does your institution hope to gain from your participation in the workshop?***

We hope to have an opportunity to share our successes and challenges with others and get some creative ideas on how to expand out recruitment of Hispanic males in to stem.

### **San Diego City College**

***What initiatives/strategies have been/are being used currently at your institution to increase male enrollment?***

Puente Program together with Trio Program have made a new directive to facilitate increased retention and success of male students in the STEM fields; refocus of MESA program to look into reasons why males fail at a higher rate than females in our math and science classes.

***What does your institution hope to gain from your participation in the workshop?***

Gain new insights as to how male STEM majors are succeeding elsewhere. Create new paradigm/s and test the sustainability of said new processes to make institutional changes at our campus.

### **South Texas College**

***What initiatives/strategies have been/are being used currently at your institution to increase male enrollment?***

STC currently has a mentoring program sponsored by College Cost Reduction Access Act (CCRAA) Grant, a Dual Enrollment Engineering Academy, and a Dual Enrollment Medical Science Academy both of which provide students with a retention specialist and an academic advisor. Additionally, STEM Departments at STC have initiated faculty advising plans to facilitate timely graduation and increase student retention.

***What does your institution hope to gain from your participation in the workshop?***

STC hopes to learn what other institutions are doing to increase male enrollment and retention rates as well as what funding opportunities are available which can support and/or enhance our efforts.

### **Texas A&M International University**

***What initiatives/strategies have been/are being used currently at your institution to increase male enrollment?***

## HISPANIC MALES IN STEM

The AMIGOS (A&M Goes On-Site) program complements the ongoing commitment of TAMIU with South Texas in raising the awareness and opportunities to higher education. The Office of Recruitment and School Relations implements set of activities every month from September to May in both high schools and at the TAMIU campus. These activities are design to promote higher educational awareness in a community that has one of the lowest higher educational attainment rates in the state.

***What does your institution hope to gain from your participation in the workshop?***

Planning an effective recruitment cycle is essential for a positive outcome in enrollment. Since 2006 STEM student at TAMIU has increase by 85%. As new trends en STEM demographics emerge, recruitment for STEM students becomes critical for the overall enrollment goals of our institution. It is imperative to TAMIU to identify those trends and embrace them as an optimal opportunity to increase Hispanic Male enrollment in STEM program, by creating effective recruitment and retention strategies for this specific group. TAMIU also hope to learn and implement STEM best-practices of sister Hispanic Serving Institutions.

**Texas A&M University-Kingsville**

***What initiatives/strategies have been/are being used currently at your institution to increase male enrollment?***

Here are some of the activities that College of Engineering is currently engaged for enrollment;

- Coastal Bend BEST robotics competition for high schools science fair at the Texas A&M University-Kingsville, TX
- Local and regional high school visits to recruit students
- To organize parent/student Symposium
- To give presentations at local high schools and colleges
- May-Mester, and South Texas Career EXPO

***What does your institution hope to gain from your participation in the workshop?***

To increase the participation of the Hispanic students in STEM education and increase the retention rates. We hope to gain more information and experience on different possible approaches and collaborations that will lead to drawing more students in STEM education and increase the retention rates.

**The National Hispanic University**

***What initiatives/strategies have been/are being used currently at your institution to increase male enrollment?***

There are several strategies including the Student Success Program, First Year Experience, academic coaches through the Center for College Success and monthly events to increase student connection to the university. Efforts have resulted in a increase in a persistence rate that has remained at 54.9% over the past 5years to 90% as of Fall 2009 to Spring 2010.

***What does your institution hope to gain from your participation in the workshop?***

Formation of alliances with other MSIs

## HISPANIC MALES IN STEM

Sharing of effective models, best practices and proven strategies

### **Universidad Del Este**

***What initiatives/strategies have been/are being used currently at your institution to increase male enrollment?***

Both of these associates are involved in student academic mentoring activities. Prof. Torres works closely with students enrolled in general and advanced math courses. He is also our liaison between our School and the Vice Chancellor for Retention. He also coordinates professional development workshops for our math faculty members.

Mr. Carrasquillo has submitted an NSF-ATE proposal to fund students in the Associates Degree Engineering Program. He also works closely as an academic mentor to the engineering students. He oversees student progress and has developed a new associate's degree in Avionics.

***What does your institution hope to gain from your participation in the workshop?***

We want to identify the factors that limit Hispanic male student enrollment in STEM academic programs. We want to share our experiences in enrollment, retention and graduation of Hispanic males in STEM programs. We want to determine the opportunities for developing proposals to address this concern.

### **University of Houston-Downtown**

***What initiatives/strategies have been/are being used currently at your institution to increase male enrollment?***

Through our Scholars Academy we provide to all STEM majors retention, motivation and leadership activities such as Peer Led Team Learning, Role Model Speakers, Research experiences, etc.

***What does your institution hope to gain from your participation in the workshop?***

New input/insight into activities and possible alliances to increase male participation.

### **University of Texas at Brownsville**

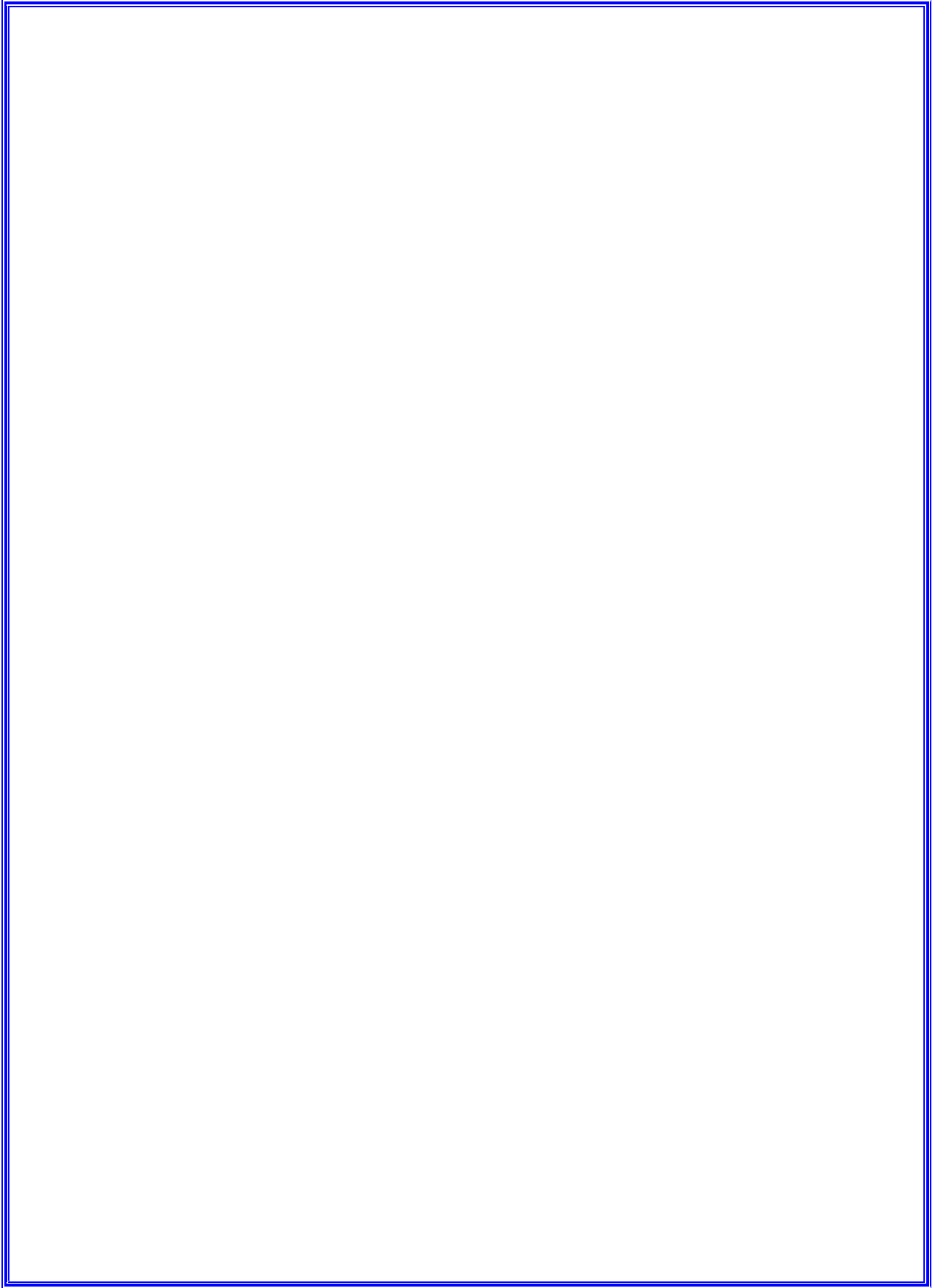
***What initiatives/strategies have been/are being used currently at your institution to increase male enrollment?***

We are not aware of any specific programs beyond our first-year retention programs that are focused on both males and females.

***What does your institution hope to gain from your participation in the workshop?***

Our institution is 92% Hispanic and in what has consistently been ranked as the poorest region in the U.S. We are currently working on grants and initiatives for retention of Hispanics and 1<sup>st</sup> generation students, but we will use this time in further developing and generating ideas. We also expect to utilize the lessons learned in our new Excellence in STEM Education (ESTEME) Center. We are very excited about the opportunity to attend this workshop.

## HISPANIC MALES IN STEM



# HISPANIC MALES IN STEM

## APPENDIX B: Hispanic Males Workshop Agenda

### Quality Education for Minorities (QEM) Network Workshop on the Recruitment and Retention of Hispanic Male Students in Science, Technology, Engineering, and Mathematics (STEM) at HSIs Marriott Las Vegas Suites • Las Vegas, NV March 26-27, 2010

#### FRIDAY, MARCH 26

##### AM

8:30     *Registration and Continental Breakfast*

9:00     Opening Session  
*Welcome, Introductions, and Review of Purpose and Agenda*  
Shirley McBay, President, QEM Network

9:30     Plenary Session:  
*Overview of Research Findings to Date (Data and Lessons Learned)*  
*on STEM Participation and Achievement of Hispanic Males*  
*STEM AND HISPANIC MALES - What's the Problem?*

Carlos Rodriguez, Principal Research Scientist  
American Institutes for Research (AIR), and QEM Consultant

10:00    *A Best Practice: Use of Data to Inform Program Interventions*  
Alicia C. Dowd, Associate Professor and Co-Director  
Center for Urban Education, University of Southern California (USC)

10:30    *Group Discussion of Findings, Status, and Broadening Participation Challenges*  
Participants Share the Findings and Lessons Learned from their Initiatives

11:15    *Coffee Break*

11:30    Plenary Session:  
*Effective Strategies and Best Practices in the Recruitment and*  
*Retention of Hispanic Males in STEM*

Mark Hernandez, Associate Professor, Department of Civil, Environmental  
and Architectural Engineering, and Director, Colorado Diversity Initiative  
University of Colorado, Boulder (UCB)

##### NOON/PM

12:00    *Group Discussion of Strategies and Best Practices – Identify Success Factors*  
Teams Discuss their Institutions' Current Recruitment/Retention Strategies

## HISPANIC MALES IN STEM

- 12:30     *Working Lunch*  
*Continued Discussion of Institutions' Current Recruitment/Retention Strategies and Lessons Learned*
- 1:30     Plenary Session:  
*Development of Innovative and Creative Enrollment and Support Strategies in STEM at Critical Junctures along the Educational Pathway*  
Lorelle Espinosa, Director of Policy and Strategic Initiatives  
Institute for Higher Education Policy (IHEP), and QEM Consultant  
  
Victor Saenz, Assistant Professor, Educational Administration  
University of Texas at Austin, and QEM Consultant
- 2:30     Concurrent Sessions: Potential STEM Pathway Components  
(See assignment sheet for working groups)  
  
Each working group is to discuss the following topics:  
- *Current status and contributing factors in Hispanic male educational attainment/achievement in STEM at each critical juncture*  
- *Best practices, strategies, and models for increasing STEM enrollment/participation of Hispanic males at each critical juncture*  
- *Recommendations for Essential components of a pathway-focused replication "model" for each critical juncture*  
  
Group I Facilitators: Alicia Dowd, USC and Victor Saenz, UT Austin  
Group II Facilitators: Lorelle Espinosa, IHEP and J. Arthur Jones, QEM  
Group III Facilitators: Carlos Rodriguez, AIR and Althea Burns, QEM  
Group IV Facilitators: Mark Hernandez, UCB and Costello Brown, QEM
- 4:00     *Break*
- 4:15     Plenary Session:  
Working Groups present overview of their discussions/recommendations regarding key strategies and best practices for recruitment and retention initiatives for Hispanic males at critical junctures of the pathway
- 4:45     Group Discussion:  
*An Inquiry-Based Session on Facilitating/Inhibiting Factors in the Implementation of Initiatives/Programs to Address Hispanic Males' Participation in Higher Education and STEM*  
(Topics will include the Impact of Cultural Traditions on Hispanic/Latino Male Participation in Higher Education and STEM)  
  
Facilitator: Alicia Dowd, USC, and QEM Consultant

## HISPANIC MALES IN STEM

5:30 Speaker: *Identification of Pathway Components for Potential Replication, from Undergraduate to Graduate School*  
Mark Hernandez, University of Colorado, Boulder, and QEM Consultant

*Review of Assignment and Next Day's Agenda*  
Shirley McBay, QEM Network

6:15 *Adjournment, Day One and Dinner on Your Own*

Overnight Assignment: Institutional teams discuss potential changes/modifications to their approaches to the recruitment and retention of Hispanic males in STEM and identify three to five critical elements of pathway components to increase their enrollment in STEM.

### SATURDAY, MARCH 27

#### AM

8:30 *Continental Breakfast*

9:00 Concurrent Sessions  
*Development of pathway-based STEM recruitment and retention strategies, with a specific focus on three critical transition junctures:*  
- *High School to College/2-year College Transition*  
- *2-Year to 4-Year College/University Transition*  
- *Undergraduate to Graduate School Transition*

Institutional Teams Share Program Ideas, Critical Elements, and Strategies from Overnight Assignment

Group I Facilitators: Alicia Dowd and Victor Saenz  
Group II Facilitators: Lorelle Espinosa and J. Arthur Jones  
Group III Facilitators: Carlos Rodriguez and Althea Burns  
Group IV Facilitators: Mark Hernandez and Costello Brown

10:00 Plenary Session:  
*Replication Techniques and Processes for Implementing Hispanic Male Initiatives*  
- *Translating methods that demonstrate successful outcomes into evidence-based practice*  
Lorelle Espinosa, QEM Consultant

10:30 *Facilitating/Inhibiting Factors in Program Implementation and Lessons Learned*  
Victor Saenz, QEM Consultant

11:00 *Coffee Break*

## HISPANIC MALES IN STEM

11:15 Plenary Session:  
*Potential Sources of Support: Federal and Private Foundations/Corporations*  
Marilyn Suiter, Program Director for Special Activities  
Division of Human Resource Development (HRD)  
Directorate for Education and Human Resources, NSF  
Costello Brown, QEM Network

### **PM**

12:15 *Working Lunch*  
Working Groups present summary of key discussion points and  
recommendations for pathway transition options/model

*Closing Comments and Next Steps*

1:30 *Adjournment*

# HISPANIC MALES IN STEM

## APPENDIX C: Funding Resource Guide

### National Science Foundation

Division of Human Resource Development  
Directorate for Education and Human Resources

**Program Name/Focus:** *The Alliances for Broadening Participation in STEM (ABP)*

ABP includes the Louis Stokes Alliances for Minority Participation (LSAMP) program, Bridge to the Doctorate (LSAMP-BD) Activity, LSAMP educational research projects, and the Alliances for Graduate Education and the Professoriate (AGEP) program.

**Program Goals:** This portfolio of programs seeks to increase the number of students successfully completing quality degree programs in science, technology, engineering and mathematics (STEM). Particular emphasis is placed on transforming STEM education through innovative academic strategies and experiences in support of groups that historically have been underrepresented in STEM disciplines: African-Americans, Alaskan Natives, Native Americans, Hispanic Americans, and Native Pacific Islanders. The educational research portfolio contributes to the body of literature of successful practices in student recruitment, retention, persistence, and attainment of STEM undergraduate and graduate degrees, especially for populations underrepresented in STEM disciplines. Managed synergistically, the ABP cluster enables seamless transitions from the STEM baccalaureate to attainment of the doctorate and entry to the STEM professoriate.

**Contact:**

Program Officer, Alliances for Broadening Participation in STEM  
Education & Human Resources Directorate  
The National Science Foundation  
4201 Wilson Boulevard, Arlington, VA 22230

**Foundation/Agency URL:**

[http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=13646&org=HRD&sel\\_org=HRD&from=fund](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13646&org=HRD&sel_org=HRD&from=fund)  
<http://www.nsf.gov/pubs/2010/nsf10522/nsf10522.htm>

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**Program Name/Focus:** *Integrative Graduate Education and Research Traineeship Program (IGERT)*

IGERT is an NSF-wide endeavor involving the Directorates for Biological Sciences (BIO), Computer and Information Science and Engineering (CISE), Education and Human Resources (EHR), Engineering (ENG), Geosciences (GEO), Mathematical and Physical Sciences (MPS), Social, Behavioral, and Economic Sciences (SBE), the Office of Polar Programs (OPP), and the Office of International Science and Engineering (INT).

**Program Goals:** The IGERT program has been developed to meet the challenges of educating U.S. Ph.D. scientists and engineers who will pursue careers in research and education, with the interdisciplinary backgrounds, deep knowledge in chosen disciplines, and technical, professional, and personal skills to become, in their own careers, leaders and creative agents for change. The program is intended to catalyze a cultural change in graduate education, for students, faculty, and institutions, by establishing innovative new models for graduate education and training in a fertile environment for collaborative research that transcends traditional disciplinary boundaries. It is also intended to facilitate diversity in student participation and preparation, and to contribute to a world-class, broadly inclusive, and globally engaged science and engineering workforce.

## HISPANIC MALES IN STEM

**Contact:**

Program Director, Integrative Graduate Education and Research Traineeship Program  
The National Science Foundation  
4201 Wilson Boulevard, Arlington, VA 22230

**Foundation/Agency URL:**

[http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=12759&org=HRD&sel\\_org=HRD&from=fund](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12759&org=HRD&sel_org=HRD&from=fund)  
<http://www.nsf.gov/pubs/2010/nsf10523/nsf10523.htm>

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The **Division of Human Resource Development (HRD)** serves as a focal point for NSF's agency-wide commitment to enhancing the quality and excellence of science, technology, engineering, and mathematics (STEM) education and research through broadening participation by underrepresented groups and institutions. The Division's programs aim to increase the participation and advancement of underrepresented minorities and minority-serving institutions, women and girls, and persons with disabilities at every level of the science and engineering enterprise. HRD programs contribute to attainment of the PEOPLE outcome goal of the NSF Strategic Plan FY 2003-2008: A diverse, competitive, and globally engaged U. S. workforce of scientists, engineers, and well-prepared citizens. Programs within HRD have a strong focus on partnerships and collaborations in order to maximize the preparation of a well-trained scientific and instructional workforce for the new millennium.

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### National Science Foundation

Division of Research on Learning in Formal and Informal Settings  
Directorate for Education and Human Resources

**Program Name/Focus:** Informal Science Education (ISE)

**Program Goals:** The ISE program invests in projects that promote lifelong learning of STEM in a wide variety of informal settings. Funding is provided for projects that advance understanding of informal STEM learning, that develop and implement innovative strategies and resources for informal STEM education, and that build the national professional capacity for research, development, and practice in the field. There are five categories of ISE program grants: Research; Pathways; Full-Scale Development; Broad Implementation; and Communicating Research to Public Audiences (CRPA).

**Contacts:**

Program Officer, Informal Science Education  
Education & Human Resources Directorate  
The National Science Foundation  
4201 Wilson Boulevard  
Arlington, VA 22230  
Address Questions to the Program:      Email: [DRLISE@nsf.gov](mailto:DRLISE@nsf.gov)

**Foundation/Agency URL:**

[http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5361&org=DRL&from=home](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5361&org=DRL&from=home)  
[http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=nsf09553](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf09553)

## HISPANIC MALES IN STEM

**Program Name/Focus:** Innovative Technology Experiences for Students and Teachers (ITEST)

**Program Goals:** ITEST is designed to increase the opportunities for students and teachers to learn about, experience, and use information technologies within the context of science, technology, engineering, and mathematics (STEM), including Information Technology courses. ITEST responds to current concerns and projections about shortages of STEM professionals and information technology workers in the United States and seeks solutions to help ensure the breadth and depth of the STEM workforce. ITEST supports the development, implementation, testing and scale-up of models as well as related research studies.

**Contact:**

ITEST Program Officer  
Education & Human Resources Directorate  
The National Science Foundation  
4201 Wilson Boulevard, Arlington, VA 22230

**Foundation/Agency URL:**

[http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5467&org=DRL&from=home](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5467&org=DRL&from=home)  
<http://www.nsf.gov/pubs/2009/nsf09506/nsf09506.htm>

The **Division of Research on Learning in Formal and Informal Settings (DRL)** invests in projects to improve the effectiveness of STEM learning for people of all ages. Its mission includes promoting innovative research, development, and evaluation of learning and teaching across all STEM disciplines by advancing cutting-edge knowledge and practices in both formal and informal learning settings. DRL seeks to advance both early, promising innovations as well as larger-scale adoptions of proven educational innovations. In doing so, it challenges the field to create the ideas, resources, and human capacity to bring about the needed transformation of STEM education for the 21st century.

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**U.S. Department of Health and Human Services  
National Institutes of Health (NIH)  
The National Center for Research Resources (NCRR)**

**Program Name/Focus:** NCRR Science Education Partnership Award (SEPA)

**Program Goals:** The SEPA program supports the creation of innovative partnerships between biomedical and clinical researchers and K-12 teachers and schools, museum and science center educators, media experts, and other interested educational organizations. Particular importance will be given to SEPA applications that target K-12 science educational topics that may not be addressed by existing science curricula, community-based or media activities.

**Contact:**

Dr. L. Tony Beck  
Division for Clinical Research Resources, NCRR  
6701 Democracy Blvd, Room 916-MSC 4874, Bethesda, MD 20892  
(301) 435-0805      beckl@mail.nih.gov

**Foundation/Agency URL:**

## HISPANIC MALES IN STEM

<http://grants2.nih.gov/grants/guide/pa-files/PAR-06-549.html>

[http://www.ncrr.nih.gov/about\\_us/programs.asp](http://www.ncrr.nih.gov/about_us/programs.asp)

The **National Center for Research Resources (NCRR)** provides researchers with the training and tools they need to understand, detect, treat, and prevent a wide range of diseases. NCRR connects researchers with one another as well as with patients and communities across the Nation to harness the power of shared resources and research. The SEPA program's goals are to foster the development of novel programs to improve K-12 and the general public's understanding of the clinical trial process as well as the health science advances stemming from National Institutes of Health-funded clinical and basic research.

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### The Annenberg Foundation

**Program Name/Focus:** Education and Youth Development

**Program Goals:** The Annenberg Foundation provides support for projects within its grant-making interest areas of: education and youth development; arts, culture and humanities; civic and community; health and human services; animal services; and the environment. The Foundation's focus is not on chips and wires but rather on education, particularly public school restructuring and reform in the United States.

**Contact:**

Program Office  
The Annenberg Foundation  
Radnor Financial Center, Suite A-200  
150 N. Radnor-Chester Road, Radnor, PA 19087  
(610) 341-9066  
[info@annenbergfoundation.org](mailto:info@annenbergfoundation.org)

**Foundation/Agency URL:**

<http://www.annenbergfoundation.org/>  
[http://www.annenbergfoundation.org/grants\\_database/grants\\_database\\_list.htm](http://www.annenbergfoundation.org/grants_database/grants_database_list.htm)

Established in 1989 by Walter H. Annenberg, the **Annenberg Foundation** provides funding and support to nonprofit organizations in the United States and globally through its headquarters in Radnor, PA, and offices in Los Angeles, CA. Its major program areas are education and youth development; arts, culture and humanities; civic and community; health and human services; and animal services and the environment. In addition, the Foundation operates a number of initiatives that expand and complement these program areas. The Annenberg Foundation exists to advance the public well-being through improved communication. As the principal means of achieving this goal, the Foundation encourages the development of more effective ways to share ideas and knowledge.

## HISPANIC MALES IN STEM

### The Ford Foundation

**Program Name/Focus:** Education and Scholarship

**Program Goals:** The Ford Foundation supports efforts to improve access to high-quality education. Support is provided for educational institutions at all levels to expand access, innovate in the classroom, evaluate their efforts, and share best practices. The Foundation also supports interdisciplinary scholarship in the social sciences and humanities ...from multiple perspectives, including a focus on gender, race, ethnicity, identity, religion, and culture.

**Contact:**

Grants  
The Ford Foundation  
320 East 43 Street, New York, NY 10017  
(212) 573-5000 office-secretary@fordfound.org

**Foundation/Agency URL:**

<http://www.fordfound.org>; <http://www.fordfound.org/grants/inquiry/usa/2/en>

The **Ford Foundation** states that meaningful citizenship and democratic practice cannot thrive without strong public schools and higher educational institutions that are accessible and equitable in providing challenging educational opportunities. The Foundation's work supports educational institutions at all levels to expand access, innovate in the classroom, evaluate their efforts and share best practices. ... "We look for ways to build knowledge that deepens understanding of diversity and helps inform civic discourse in a continually diversifying nation and world."

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### The General Electric (GE) Foundation

**Program Name/Focus:** Developing Futures in Education

**Program Goals:** The Developing Futures™ in Education program (which encompasses the GE College Bound Program) was created to raise student achievement through improved math and science curricula and management capacity at the schools. The program has been expanded with a grant investment of nearly \$150 million in six targeted U.S. school districts: Atlanta, GA; Cincinnati, OH; Stamford, CT; New York City, NY; Jefferson County, KY; and Erie, PA. School districts use their grants to develop a rigorous, system-wide math and science curriculum and provide comprehensive professional development for their teachers.

**Contact:**

GE Foundation  
3135 Easton Turnpike, Fairfield, CT 06828  
(203) 373-3216 q      gefoundation@ge.com

**Foundation/Agency URL:**

[http://www.ge.com/foundation/grant\\_initiatives/education.html](http://www.ge.com/foundation/grant_initiatives/education.html)  
<http://www.ge.com/foundation/>

The **GE Foundation**, the philanthropic organization of the General Electric Company, works to strengthen educational access, equity, and quality for disadvantaged youth globally. For more than 50 years, the GE Foundation has invested in programs based on a fundamental premise: a quality

## HISPANIC MALES IN STEM

education ushers in a lifetime of opportunity, which helps build a strong and diverse workforce and citizenry. “Today, the need for a quality education has never been more urgent, especially for individuals from under-represented and disadvantaged backgrounds. We continue to address this societal and economic imperative by supporting high-impact initiatives that improve the access, equity and quality of public education in GE communities around the world.”

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### The Kresge Foundation

**Program Name/Focus:** Education Program

**Program Goals:** The Kresge Foundation’s Education Team is focusing its efforts on two vital elements necessary to a well-educated citizenry – high-quality early-childhood education, and accessible, success-oriented two- and four-year higher education programs. Both efforts are focused on the needs of underserved and under-represented students. Four of Kresge’s nine values criteria are central to the grantmaking of the Education Team:

- \* Creating opportunity for underserved and neglected students through increased access and avenues for academic success
- \* Making diversity – racial, ethnic and gender – a demographic priority among staff and board members so as to reflect the student populations served
- \* Establishing environmental conservation as a strategic institutional objective to both contribute to the mitigation of climate change and serve as a community model for sustainable design and construction
- \* Achieving positive community impact beyond the confines of the educational institution.

**Contact:**

The Kresge Foundation  
3215 West Big Beaver Road  
Troy, Michigan 48084  
248/643-9630

**Foundation/Agency URL:** <http://www.kresge.org/index.php/what/education/>

**The Kresge Foundation** is a \$2.8 billion private, national foundation that seeks to influence the quality of life for future generations through its support of nonprofit organizations in six fields of interest: health, the environment, community development, arts and culture, education and human services. It is headquartered in metropolitan Detroit, in the suburb community of Troy, Michigan. In 2008, Kresge awarded 342 grants totaling \$181 million.

## HISPANIC MALES IN STEM

### **The Lumina Foundation for Education**

**Program Name/Focus:** The Case for Improved Higher Education Access & Attainment

**Program Goals:** Lumina Foundation supports efforts to increase awareness of the benefits of higher education, improve student access to and preparedness for college, improve student success in college and increase productivity across the higher education system. With its partners, Lumina strives to meet workforce demands and close attainment gaps for groups not historically well-served by higher education. Through grants for research, innovation, communication, and evaluation, as well as policy education and leadership development, Lumina Foundation addresses issues that affect access and educational attainment among all students, particularly underserved student groups, including adult learners.

**Contact:**

Lumina Foundation for Education  
P.O. Box 1806  
Indianapolis, IN 46206-1806

**Foundation/Agency URL:**

[http://www.luminafoundation.org/about\\_us/](http://www.luminafoundation.org/about_us/)  
[http://www.luminafoundation.org/our\\_work/](http://www.luminafoundation.org/our_work/)

The mission of the **Lumina Foundation for Education** is to expand access to postsecondary education in the United States. The Foundation seeks to identify and promote practices leading to improvement in the rates of entry and success in education beyond high school, particularly for students of low income or other underrepresented backgrounds. It likewise seeks improvement in opportunities for adult learners. The Foundation carries out the mission through funding and conducting research; communicating ideas through reports, conferences and other means; and making grants to educational institutions and other nonprofits for innovative programs. It also contributes limited resources to support selected community and other charitable organizations.

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### **The National Education Association (NEA) Foundation**

**Program Name/Focus:** Closing the Achievement Gaps Initiative

**Program Goals:** The NEA Foundation created the Closing the Achievement Gaps Initiative to accelerate the achievement rate for under-achieving low income and minority student groups, thereby closing the gap between these students and their higher achieving, more affluent peers. The Foundation's researched-based strategy shows that developing and strengthening partnerships among local education associations, school districts, and community organizations, is a powerful force for improving student performance and a vehicle for systemic reform.

**Contact:**

The NEA Foundation, Attn: Student Achievement Grants  
1201 – 16<sup>th</sup> Street, NW, Suite 416  
Washington, DC 20036-3207  
(202) 822-7840  
[foundation\\_info@nea.org](mailto:foundation_info@nea.org)

## HISPANIC MALES IN STEM

**Foundation/Agency URL:**

<http://www.neafoundation.org/pages/educators/achievement-gaps-initiative/>  
<http://www.neafoundation.org/>

The **National Education Association (NEA) Foundation**, through the unique strength of its partnership with educators, advances student achievement by investing in public education that will prepare each of America's children to learn and thrive in a rapidly changing world. The NEA Foundation supports a variety of efforts by teachers, education support professionals, and higher education faculty and staff to improve student learning in the nation's public schools, colleges, and universities.

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### The Spencer Foundation

**Program Name/Focus:** The Relation between Education and Social Opportunity (Research Foci)

**Program Goals:** The Spencer Foundation seeks to shed light on the role education plays in reducing economic and social inequalities -- as well as, sometimes, re-enforcing them -- and to find ways to more fully realize education's potential to promote more equal opportunity. Expanded opportunity is important not only to a society's economic well being but to the character of its civic, cultural and social life as well.

**Contact:**

Annie Brinkman, Program Administrator  
625 N. Michigan Avenue, Suite 1600, Chicago, IL 60611  
(312) 274-6511 [abrinkman@spencer.org](mailto:abrinkman@spencer.org)

**Foundation/Agency URL:**

<http://www.spencer.org/>

The **Spencer Foundation** was established in 1962 by Lyle M. Spencer. The Foundation is intended, by Spencer's direction, to investigate ways in which education, broadly conceived, can be improved around the world. From the first, the Foundation has been dedicated to the belief that research is necessary to the improvement in education. The Foundation is thus committed to supporting high-quality investigation of education through its research programs and to strengthening and renewing the educational research community through its fellowship and training programs and related activities.

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### The Walmart Foundation

**Program Name/Focus:** A Focus on Education

**Program Goals:** The Walmart Foundation awards grants that seek to address the educational needs of underserved young people ages 12 to 25. Examples include programs focused on high school success, improving college access and adolescent literacy. Within post-secondary education, the Foundation's interests are in promoting first-generation college student success, minority-serving institution support, college access issues and drop out re-engagement. The Walmart Foundation's interests within education include:

- Teacher Rewards
- First-generation college student success

## HISPANIC MALES IN STEM

- Minority-serving institution support
- Job skills training and workforce development
- Dropout prevention and re-engagement
- Veterans' education

**Contact:**

Walmart Home Office  
702 SW 8th Street  
Bentonville, Arkansas  
72716-8611

**Foundation/Agency URL:**

[http:// www.walmartfoundation.org](http://www.walmartfoundation.org)  
<http://www.waltonfamilyfoundation.org/forgrantseekers/types.asp>

Through its philanthropic programs and partnerships, the **Walmart Foundation** funds initiatives focused on creating opportunities in education, workforce development, economic opportunity, environmental sustainability, and health and wellness. Walmart and its U.S. Foundation have been recognized by the Chronicle of Philanthropy as the largest corporate cash contributor in the United States. From February 1, 2008 through January 31, 2009, Walmart – and its domestic and international foundations – gave more than \$423 million in cash and in-kind gifts globally.

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### The Walton Family Foundation

**Program Name/Focus:** Systemic Reform in Education (K-12) - Traditional District School Improvement

**Program Goals:** To improve educational opportunities for traditional district school students in grades K-12 through supporting educational reform initiatives that adhere to the principles of Accountability, Transparency, Choice and Incentives.

**Contact:**

The Walton Family Foundation  
P.O. Box 2030, Bentonville, AR 72712  
(479) 464-1570      [info@wffmail.com](mailto:info@wffmail.com)

**Foundation/Agency URL:**

<http://www.waltonfamilyfoundation.org/educationreform/index.asp>  
<http://www.waltonfamilyfoundation.org/forgrantseekers/types.asp>

The **Walton Family Foundation** invests in programs that empower parents to choose the best education for their children. In some neighborhoods across America, parents have access to excellent educational options. But in too many other communities, educational options are limited and often dismal. The communities with the fewest educational options also tend to be places where students encounter the lowest performing schools. A majority of children in these neighborhoods drop out of school and suffer the lifelong consequences of missed educational opportunities. It is in these communities where the Foundation concentrates its work. ... The Foundation is interested in helping children to receive high-quality educations in public, charter and private schools. The most important thing is that children are educated to the high standards necessary to succeed and thrive in today's world.

# HISPANIC MALES IN STEM

## APPENDIX D:

### List of Workshop Participants

Dr. Richard Alo  
Executive Director, Grants and Contracts  
Center for Computational Sciences  
University of Houston-Downtown

Ms. Melva Alvarez  
MESA Director and TLC Outreach and  
Recruitment Coordinator  
Office of Academic Support  
Pasadena City College

Mr. Jose Barajas  
Academic Advisor  
College of Sciences and Technology  
University of Houston-Downtown

Dr. Leonardo Bedoya-Valencia  
Assistant Professor  
Department of Engineering  
Colorado State University-Pueblo

Ms. Shondricka Burrell  
Geosciences Faculty  
Department of Mathematics and Science  
The National Hispanic University

Mr. Ivan Camara  
Retention Specialist  
Division of Mathematics and Science  
South Texas College

Mr. Misael Camarena  
Professor  
Department of Mathematics  
San Diego City College

Mr. Alex Carrasquillo  
Director, Engineering Program  
School of Science and Technology  
Universidad Del Este

Ms. Lisa Chaddock  
Professor  
Department of Physical Sciences

San Diego City College

Mrs. Yaneth Correa-Martinez  
STEM Education Program - Coordinator  
College of Education, Engineering, and  
Professional Studies  
Colorado State University-Pueblo

Dr. Jorge Crichigno  
Assistant Faculty  
Department of Engineering  
Northern New Mexico College

Dr. Julie Depree  
Professor  
Department of Mathematics and Statistics  
University of New Mexico Valencia Campus

Dr. David Douglass  
Dean  
Division of Natural Sciences  
Pasadena City College

Ms. Frances Duran  
Branch Registrar  
Office of Admissions and Registration  
University of New Mexico Valencia Campus

Mr. Tyrone Fox  
Director, MESA Engineering Program  
College of Engineering, Computer  
Sciences and Technology  
California State University, Los Angeles

Mr. Masood Haidarasl  
Mathematics Instructor  
Department of Developmental Mathematics  
South Texas College

Ms. Maritza Jimenez-Zeljak  
Mathematics Instructor  
Department of Mathematics/Physical Sciences  
Los Angeles Harbor College

Dr. Brock Klein  
Faculty & Director, Teaching/Learning Center  
Department of Natural Sciences

## HISPANIC MALES IN STEM

Pasadena City College

Dr. Young Lee  
Assistant Professor  
Department of Computer Science  
Texas A&M University-Kingsville

Dr. Runchang Lin  
Assistant Professor  
Department of Engineering, Mathematics,  
and Physics  
Texas A&M International University

Dr. Eric Marinez  
Associate Professor  
Department of Chemistry and Biochemistry  
California State University, Long Beach

Dr. Gustavo Menezes  
Faculty  
Department of Civil Engineering  
California State University, Los Angeles

Ms. Lisa Padgett  
Instructor  
Department of Mathematics  
Chaffey College

Ms. Betsy Price  
Director  
Center for Teaching and Learning  
University of Texas at Brownsville

Ms. Maria Ramirez  
Program Coordinator  
Jensen Student Access to Science Center  
California State University, Long Beach

Ms. Siobhan Rosales  
Outreach and Retention Specialist  
Office of Recruitment and School Relations  
Texas A&M International University

Mr. Maurice de Segovia  
Assistant Director, Recruitment  
Office of Admissions and Recruitment  
Northern New Mexico College

Mr. Jorge Torres  
Mathematics Instructor  
School of Science and Technology  
Universidad Del Este

Ms. Maria Villanueva  
Recruitment and Retention Specialist  
Center for College Success  
The National Hispanic University

Dr. Jeff Wilson  
Assistant Professor  
Department of Chemistry and  
Environmental Sciences  
University of Texas at Brownsville

Ms. Mercedes Yanez  
Associate Dean  
Department of Extended Opportunity  
Programs and Services  
Los Angeles Harbor College

Dr. Nuri Yilmazer  
Assistant Professor  
Department of Electrical Engineering &  
Computer Science  
Texas A&M University-Kingsville

### CONSULTANTS/PRESENTERS

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Associate Professor of Education and  
Co-Director, Center for Urban Education  
Rossier School of Education  
University of Southern California

Dr. Lorelle Espinosa  
Director of Policy and Strategic Initiatives  
Institute for Higher Education Policy

## HISPANIC MALES IN STEM

Dr. Mark Hernandez  
Associate Professor  
Department of Civil, Environmental and  
Architectural Engineering and  
Director, Colorado Diversity Initiative  
University of Colorado, Boulder

Dr. Carlos Rodriguez  
Principal Research Scientist  
American Institutes for Research

Dr. Victor Saenz  
Assistant Professor  
Department of Educational Administration and  
Faculty Associate, Center for Mexican American Studies  
University of Texas at Austin

### **NSF STAFF**

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Program Director  
Division of Human Resource Development  
Directorate for Education and Human Resources

### **QEM STAFF**

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## ACRONYMS AND LINKS TO

### SELECTED NSF PROGRAMS THAT ARE POTENTIAL SOURCES OF SUPPORT FOR MINORITY MALE-FOCUSED PROJECTS

<b>Acronym/ Abbreviation</b>	<b>Title Webpage</b>
<b>I<sup>3</sup> (I-cubed)</b>	Innovation Through Institutional Integration Initiative FAQs: <a href="http://www.nsf.gov/pubs/2009/nsf0918/nsf0918.jsp">http://www.nsf.gov/pubs/2009/nsf0918/nsf0918.jsp</a> Informal Science Education
<b>ISE</b>	<a href="http://www.nsf.gov/pubs/2010/nsf10565/nsf10565.htm">http://www.nsf.gov/pubs/2010/nsf10565/nsf10565.htm</a> Innovative Technology Experiences for Students
<b>ITEST</b>	<a href="http://www.nsf.gov/pubs/2009/nsf09506/nsf09506.htm?org=NSF">http://www.nsf.gov/pubs/2009/nsf09506/nsf09506.htm?org=NSF</a> Math and Science Partnership
<b>MSP</b>	<a href="http://www.nsf.gov/pubs/2010/nsf10556/nsf10556.htm">http://www.nsf.gov/pubs/2010/nsf10556/nsf10556.htm</a> Robert Noyce Teacher Scholarship Program
<b>Noyce</b>	<a href="http://www.nsf.gov/pubs/2010/nsf10514/nsf10514.htm">http://www.nsf.gov/pubs/2010/nsf10514/nsf10514.htm</a> Proactive Recruitment in Introductory Science and Mathematics
<b>PRISM</b>	<a href="http://www.nsf.gov/pubs/2010/nsf10511/nsf10511.htm">http://www.nsf.gov/pubs/2010/nsf10511/nsf10511.htm</a> Research Assistantships for High School Students
<b>RAHSS</b>	<a href="http://www.nsf.gov/pubs/2006/nsf06027/nsf06027.jsp">http://www.nsf.gov/pubs/2006/nsf06027/nsf06027.jsp</a> Research Experiences for Undergraduates Program: <a href="http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5517&amp;from=fund">http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5517&amp;from=fund</a>
<b>REU</b>	Solicitation: <a href="http://www.nsf.gov/pubs/2009/nsf09598/nsf09598.htm">http://www.nsf.gov/pubs/2009/nsf09598/nsf09598.htm</a> Scholarships in Science, Technology, Engineering, and Mathematics
<b>S-STEM</b>	<a href="http://www.nsf.gov/pubs/2009/nsf09567/nsf09567.htm">http://www.nsf.gov/pubs/2009/nsf09567/nsf09567.htm</a> Science, Technology, Engineering, and Mathematics Talent Expansion Program
<b>STEP</b>	<a href="http://www.nsf.gov/pubs/2008/nsf08569/nsf08569.htm">http://www.nsf.gov/pubs/2008/nsf08569/nsf08569.htm</a> Undergraduate Research and Mentoring in the Biological Sciences
<b>URM</b>	<a href="http://www.nsf.gov/pubs/2010/nsf10531/nsf10531.htm">http://www.nsf.gov/pubs/2010/nsf10531/nsf10531.htm</a>

## About the QEM Network

The Quality Education for Minorities (QEM) Network was established in July 1990, as a non-profit organization in Washington, DC, dedicated to improving education for minorities throughout the nation. It is the successor organization to the MIT-based QEM Project that was funded by the Carnegie Corporation of New York. With initial support from Carnegie and MIT, QEM began its operation as a focal point for the implementation of strategies to help realize the vision and goals set forth in the QEM Project's January 1990 report: *Education That Works: An Action Plan for the Education of Minorities*.

QEM seeks to put into practice the recommendations in the QEM Action Plan by working with minority and non-minority individuals, organizations, and institutions around the country to help coordinate and energize efforts to improve the education of minorities, particularly in STEM. The QEM Network engages in activities designed to:

- ◆ Promote, and disseminate information on, promising research results on the education of minorities, and serve as a resource in evaluating educational programs and projects;
- ◆ Stimulate and assist in the development of programs to increase the number of minorities in science and engineering fields;
- ◆ Implement a series of workshops in areas of special interest such as the under-participation of minority males in STEM and concerns of women STEM faculty at Hispanic-serving institutions;
- ◆ Provide technical assistance to faculty and administrators at minority-serving institutions (particularly Historically Black Colleges and Universities, Tribal Colleges and Universities, and Hispanic-serving Institutions) in the development of their proposal ideas into competitive proposals for submission to: cross-directorate programs at NSF such as CAREER and Major Research Instrumentation; programs in the Foundation's Education and Human Resources Directorate such as Math and Science Partnerships, Innovation through Institutional Integration, Historically Black Colleges and Universities Undergraduate Program (HBCU-UP), and Tribal Colleges and Universities Program (TCUP); and programs in NSF Research Directorates;
- ◆ Assist new STEM project directors through workshops and campus visits in the successful implementation of their funded multi-year projects, particularly during the initial years; and
- ◆ Strengthen the leadership capabilities of STEM faculty, staff, and students at minority-serving institutions, particularly at HBCUs and Tribal Colleges and Universities, to help ensure greater diversity in the leadership of campus-based STEM projects. Pathways to leadership development have included Leadership Development Institutes for STEM faculty at TCUs and HBCUs; Health-focused Student Summer and Academic Year Internships; Summer student Science Internships and short-term Academic Year Faculty Appointments at NSF; and Research Appointments at major NSF-funded Research Centers.

This unique array of opportunities and approaches has enabled QEM to establish an extensive network of STEM faculty, administrators, and students and to successfully engage in a range of institutional and individual capacity-building activities. Strategies employed and lessons learned the implementation of one project inform approaches in other projects. With the assistance of experienced STEM consultants and evaluators, QEM offers high quality technical assistance, encouragement, and follow-up support to chief academic officers, STEM faculty, and STEM students at a range of minority-serving institutions as well as underrepresented minority faculty at non-minority institutions.

**QEM Network Minority Males in STEM Workshop Series Report:  
Executive Summary, August 2010**

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